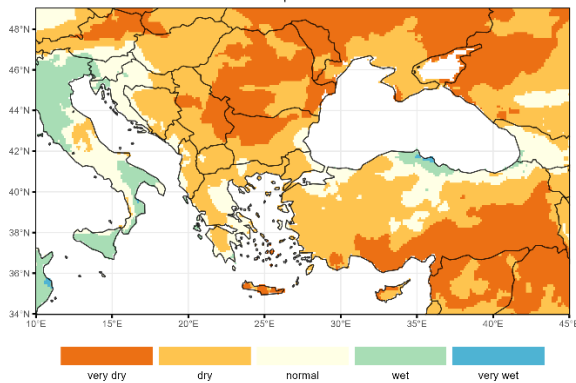


# DROUGHT MONITORING BULLETIN

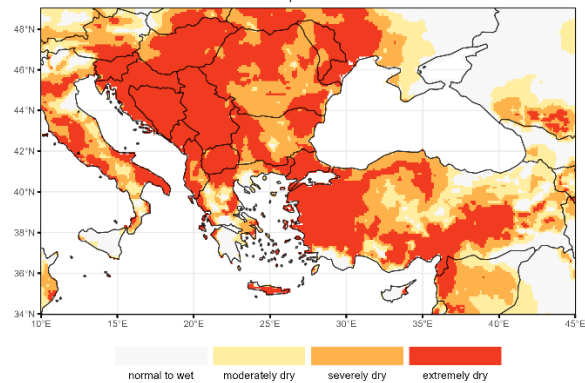
Overview from January to December 2025

## HOT SPOT

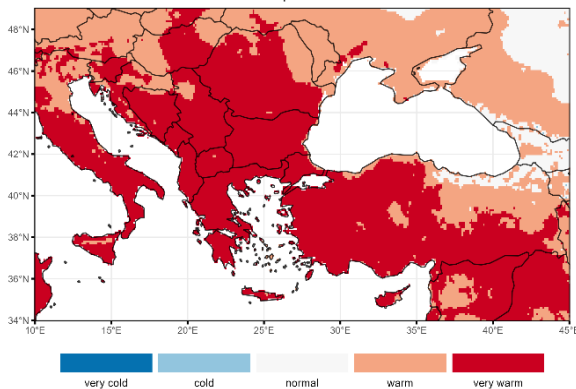
**2-monthly precipitation percentile class, February 2025**  
Reference period 1991-2020



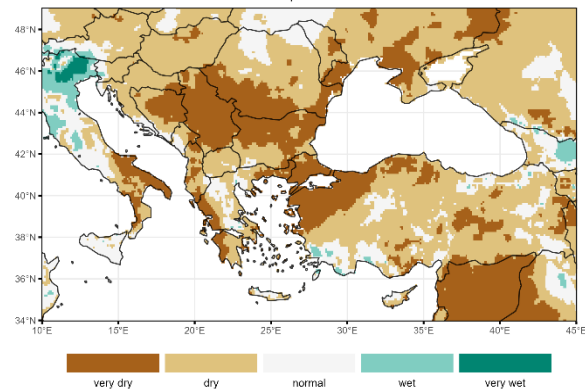
**SPEI-1, June 2025**  
Reference period 1991-2020



**2-monthly mean temperature percentile class, July 2025**  
Reference period 1991-2020



**6-monthly surface water balance percentile class, September 2025**  
Reference period 1991-2020



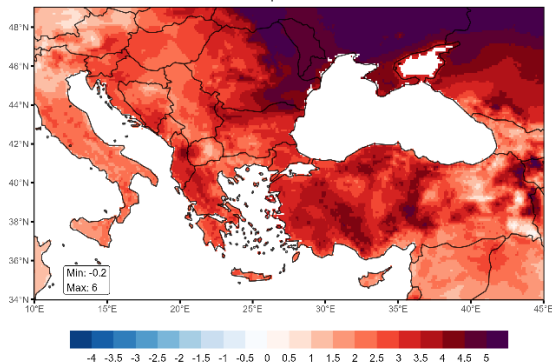
- Year 2025 began with dry to very dry January and February across most of the region, whereas in Turkey, southern Greece and coastal areas along the Black Sea precipitation deficit lasted into March. In the two-month period, much of the Balkan Peninsula was mostly up to 100 mm short of its usual precipitation amount, areas along southern Turkey between 150 and 200 mm short.
- Spring months saw changing air temperature and rainfall conditions across the region, however, every part of it at some point received temporal relief in a form of above-average amount of rain.
- June was one of the driest and warmest of the record across the region. The northern half of Balkan Peninsula and northern Turkey received mostly 100–150 mm lesser amount of rain, and some localities experienced nearly all-dry June. In well warmer than normal weather up to 45 mm more water evaporated from the soil and vegetation, in western Turkey up to 60 mm more, altogether creating an extensive span of severe to extreme surface water balance deficit.
- Heat lasted into July, leaving June-July period 2–4 °C warmer than usual across most of the region.
- Scarce rainfall conditions, centralised across central Balkan Peninsula and northern Turkey, lasted into September. The 6-monthly surface water balance overview reveals dry to very dry vegetation season across the region, with accumulated deficit of 100–250 mm and up to 350 mm respectively.

## AIR TEMPERATURE AND SURFACE WATER BALANCE

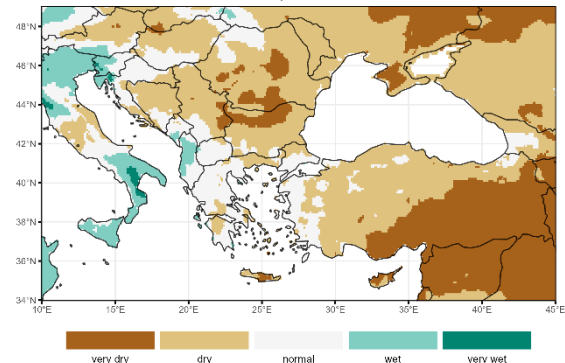
Figures below show anomalies of **monthly mean air temperature** in absolute units and **monthly accumulated surface water balance** (precipitation reduced for evapotranspiration) in percentile classes from **January to December 2025** in comparison to the 1991-2020 reference datasets. The two extreme percentile classes have a 5-percent range, and each of the middle three percentile classes has a 30-percent range. A percentile value (class) indicates the position of a score within an ordered dataset, showing the percentage of scores that fall below (within) it.

### JANUARY 2025

Anomaly of monthly mean temperature (°C), January 2025  
Reference period 1991-2020



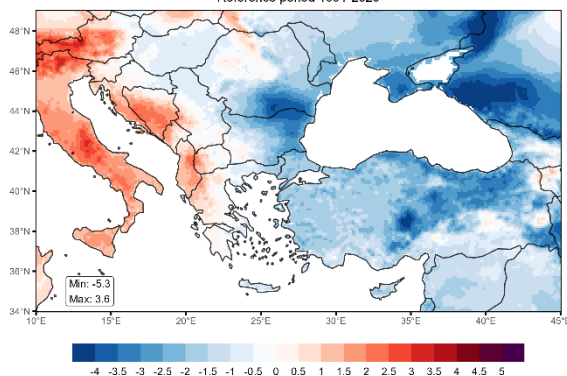
Monthly water balance percentile class, January 2025  
Reference period 1991-2020



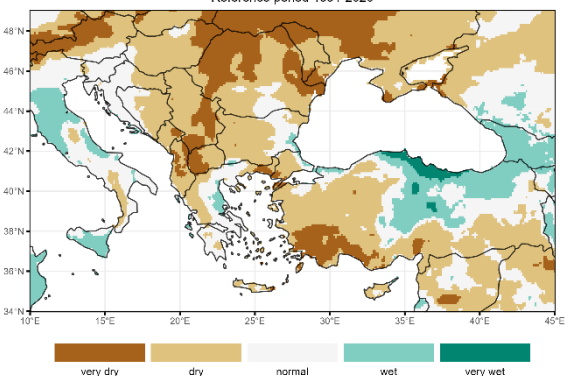
- January was unusually warm across the entire region, with all parts of it experiencing air temperatures among the warmest third of the local long-term records. Locally in northwestern and central Balkan Peninsula and in eastern Turkey, January was up to 3 °C warmer than usual, while elsewhere in the region it exceeded the long-term average to an even greater extent, mostly up to 4.5 °C but in eastern half of Romania and Moldova approximately 5 °C, making January 2025 one of the warmest of the local records.
- Precipitations were scarce across greater central-eastern Balkan Peninsula and over Turkey, resulting in monthly surface water balance deficit of up to 60 mm, along southern Turkey 90–150 mm. Only localised area in the region's far north-west recorded noticeable surface water balance surplus, of 90–150 mm.

### FEBRUARY 2025

Anomaly of monthly mean temperature (°C), February 2025  
Reference period 1991-2020

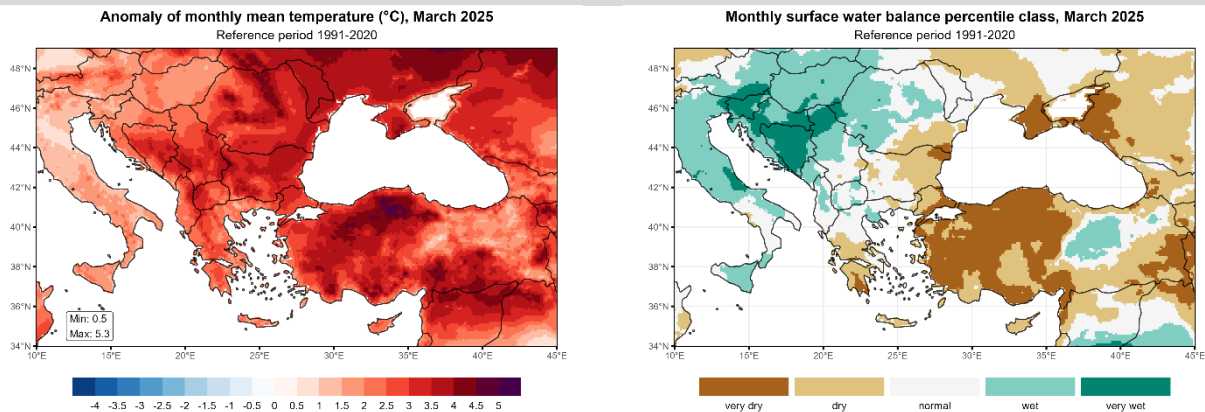


Monthly surface water balance percentile class, February 2025  
Reference period 1991-2020



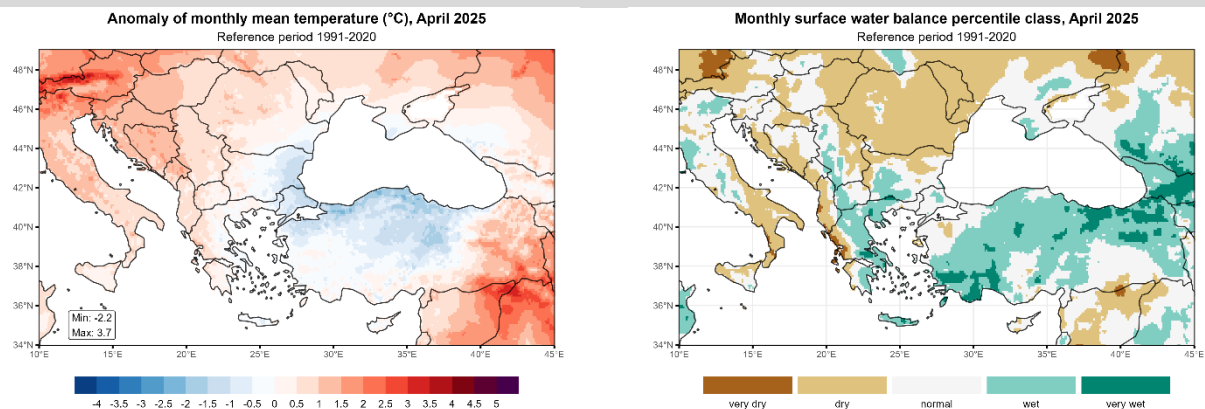
- February brought unusually cold weather to much of the region, especially to its eastern parts previously experiencing one of the warmest January months. February was 2.5–4 °C colder than normal across southern Romania, eastern Bulgaria and across much of central-northeastern Turkey, ranking February among the coldest of the records. Elsewhere, air temperatures up to 1.5 °C colder than usual prevailed, only along the wider Adriatic Sea belt it remained unusually warm, with up to 2.5 °C above the average.
- Precipitations continued to fall behind over most of Balkan Peninsula and western and southern Turkey, with additional 60–120 mm of surface water balance deficit accumulated in February, locally in southwestern Turkey up to 150 mm.

### MARCH 2025



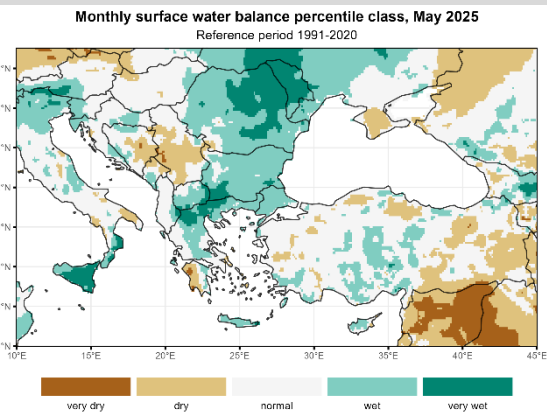
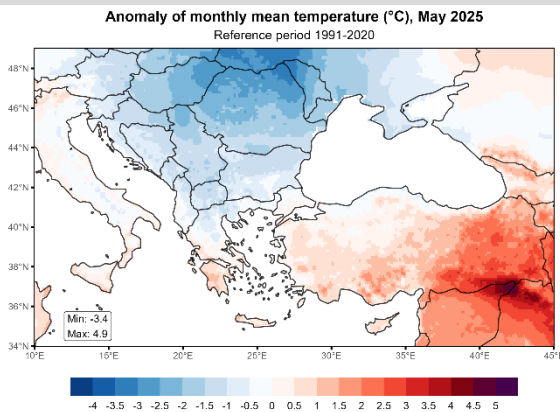
- Air temperatures intensified again in March, stretching at least 1.5 °C above the long-term average, while across most of the region March was 3–4.5 °C warmer than normal. In central, eastern and southern Balkan Peninsula and in western Turkey, March 2025 was one of the warmest in the 1991-2020 period. Over western Greece and locally along the border area with Turkey, higher air temperatures resulted in increased evaporation demand, with up to 15 mm greater than normal amount of water evaporated.
- March was abundant in rainfall rate in countries along the Adriatic Sea, with 100–250 mm of surplus, and inland toward western Romania with up to 75 mm of surplus. However, lack of rain continued over eastern Bulgaria and from southern Greece to central Turkey and its south-east, as dry to very dry March brought up to 75 mm lesser than normal amount of rain, along southern Turkey up to 100 mm less. Combined with increased evaporation, this part of the region accumulated an additional up to 90 mm of surface water balance deficit in March alone, southern Turkey up to 120 mm.

### APRIL 2025



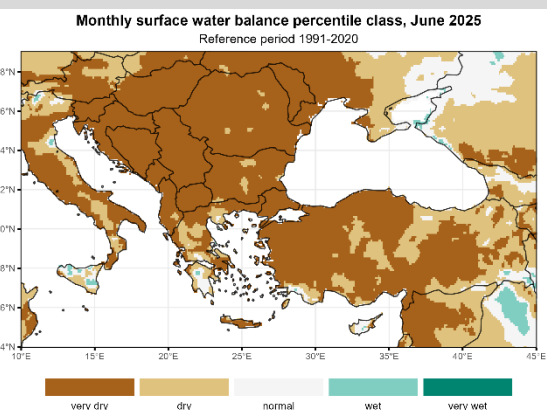
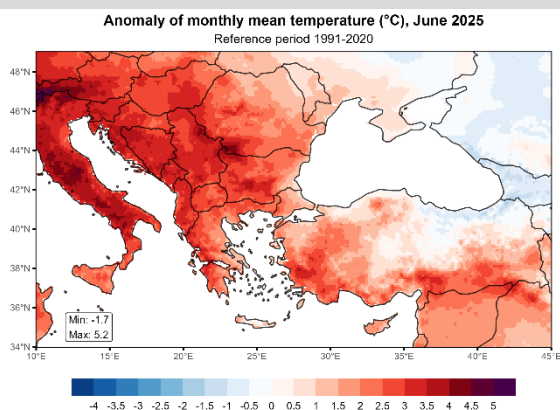
- In April, air temperatures ranged much closer about the average than in earlier months of the year, with only far north-west and far south-east of the region experiencing up to 2, locally up to 2.5 °C warmer weather on monthly average. Even the cold that persisted about the Black Sea area, was less prominent than it was back in February, although April was on monthly average still up to 2.5 °C colder than usually.
- After several months of continuously under-average precipitation conditions, April brought higher than normal amount of rain to Greece and Turkey, and also towards the central Balkan Peninsula, receiving mostly up to 60 mm higher amount of rain than normally in April, locally in central-eastern Greece, southwestern and northeastern Turkey up to 120 mm higher. Meanwhile in Moldova, Romania and the belt along the Adriatic Sea from Croatia to western Greece, wet March was replaced by dry April, bringing up to 60 mm less than usual amount of rain this April, locally in Bosnia and Herzegovina and Montenegro up to 120 mm less. During a month of no noteworthy increase in evaporation, surface water balance conditions and consequent surplus or deficit follow almost entirely the precipitation conditions.

## MAY 2025



- With May came unusually cold weather from the north-east, covering much of the Balkan Peninsula with air temperatures unusually low for May. They stretched as far south as northern Greece which recorded on average up to 1.5 °C colder than normal May, while the greatest impact of cold was felt across Hungary, northern Serbia, Romania and Moldova where the May mean ended up 2–3 °C below the long-term average. In the meantime, unusually high air temperatures continued across southeastern Turkey, for the third month in a row, resulting in 2–3.5 °C warmer than normal May and up to 30 mm higher amount of water lost from soil and vegetation due to increased evapotranspiration.
- Where present, air temperatures during colder-than-usual month had little influence on surface water balance levels, which thus reflected mostly the precipitation conditions of the month. Well higher than normal was the rainfall amount across much of Romania, northern Moldova, southern Montenegro and over the border area between Bulgaria and Greece, creating at least up to 90 mm of monthly surface water balance surplus, in northeastern Romania and northern Moldova up to 150 mm. Meanwhile, localised areas scattered across northern and eastern Turkey, northwestern Hungary, central Serbia and over to western Bosnia and Herzegovina received up to 60 mm less than usual amount of rain this May.

## JUNE 2025

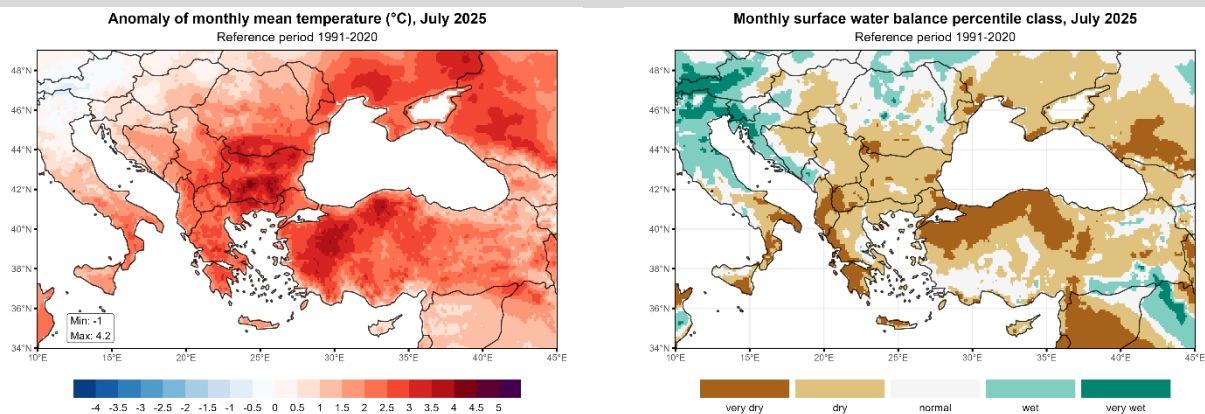


- While in southeastern Turkey warmer than normal air temperatures continued throughout June as well, they shifted greatly across most of the region, turning from extensive spread of unusual cold in May to intense heat experienced in June. Monthly mean was this June 3–4 °C above the long-term average across the entire western half of Balkan Peninsula and western and southern Turkey, locally in Serbia and Romania up to 4.5 °C warmer, with then gradual decline towards north-east where June weather was on average 1–2 °C warmer than normal in Moldova, and of average air temperatures or up to 1 °C colder than normal in northeastern Turkey.
- Due to lasting heat with much higher-than-normal air temperatures, nearly all region was experiencing extreme evaporative demand this June, the only exception being northeastern Turkey and its far south-

east. On monthly basis up to 30 mm more water was lost due to evapotranspiration than normally in June across northern half of Balkan Peninsula and central and western third of Turkey, even more so in central Serbia and locally in Turkey, up to 60 mm.

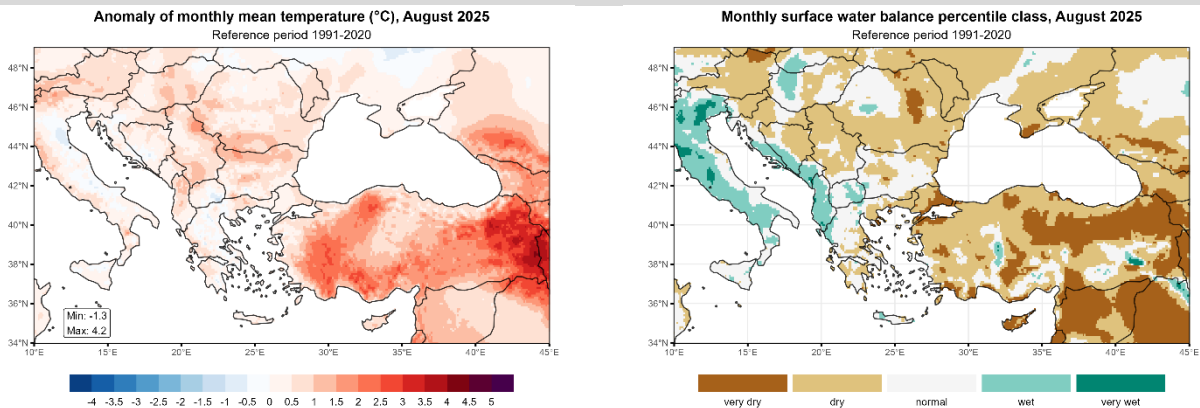
- Lasting heat was across northern Turkey and the entire Balkan Peninsula except for southern Greece accompanied by extreme lack of rain. At least 75 mm less rain fell across the northern half of Balkan Peninsula, most noticeably so over its wider central part stretching from Slovenia across central Serbia to northern Romania and western Bulgaria which recorded between 100 and 150 mm of monthly rainfall shortages. Influenced also by increased evapotranspiration, nearly all region ended this June with extremely low surface water balance levels. Much of Turkey and area north of central Greece recorded at least 60–90 mm of monthly deficit, wider central Balkan Peninsula between Slovenia, central Romania, southwestern Bulgaria and Montenegro between 120 and 150 mm, locally up to 180 mm of monthly surface water balance deficit. Such low surface water balance levels in June compared to the long-term usual ranked it as one of the driest June months in the 1991–2020 period across nearly the entire region.

## JULY 2025



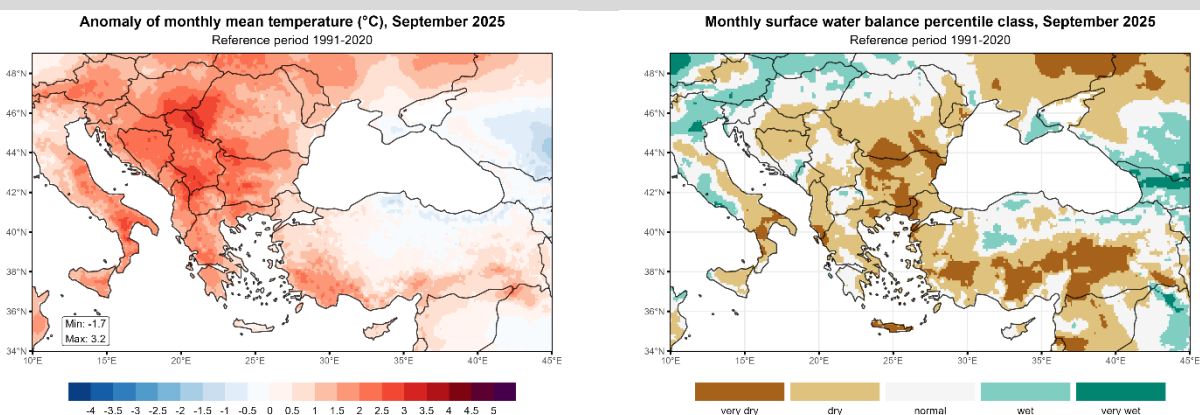
- In July, well warmer than normal air mass moved south-eastward, with the centre of anomalies highest above the long-term mean, 3.5–4.5 °C, situated between Bulgaria and wider northeastern Turkey where August ranked among the warmest of the record. In general, July mean was at least 2.5 °C higher than normal over the vast area between southern Moldova, Albania and southeastern Turkey, thus continuing the heatwave weather across the southeastern half of the region for another month.
- Drought index focusing on evaporative demand, EDDI, highlighted the entire northwestern quarter of Turkey, the coastal belt area from southern Montenegro to southern Greece, and parts of the Pannonian Basin covering Hungary and Serbia as the area experiencing extreme evaporative demand levels in July. Evapotranspiration was in this part of the region up to 30 mm higher, in addition to the regular.
- Wider central and southern Balkan Peninsula and northern Turkey received up to 75 mm less than normal amount of rain in July. Across southern Romania, Bulgaria and northern Turkey, drier spell was accompanied by the heatwave weather, altogether deepening the surface water balance deficit. With July unusually warm across the region, most of the areas with insufficient rain recorded an additional up to 60 mm of monthly surface water balance deficit, areas with also the warmest weather up to 90 mm. According to SPEI, such low surface water balance was between Albania, Bulgaria and southwestern Romania considered severely dry for July, across western coastal Greece and northwestern quarter of Turkey as extremely dry.
- Meanwhile, in countries along the Adriatic Sea and areas along the northern Balkan Peninsula especially northern half of Romania, very dry weather of June was followed by, in accumulation, noticeably wetter than normal July. These parts recorded up to 75 mm higher than normal amount of rain in July, while across southwestern Slovenia and northwestern Croatia the usual July precipitation levels were exceeded for 120–180 mm, and resulted in surface water balance surplus of a similar scale.

## AUGUST 2025



- In August, the intensity of unusually warm weather that lasted since dry June ceased to normal across Balkan Peninsula although locally air temperatures remained on average up to 1–1.5 °C above the long-term. Meanwhile, they remained unusually high for this time of the year across much of Turkey where August was on average 1.5–3 °C warmer than normal, across its far east 3–4 °C warmer. For areas along southern Turkey, August high air temperatures continued a consecutive run of at least 1.5 °C warmer than normal months since May, in eastern Turkey such run of months continued since March. Localised areas along the belt from southern Romania, across the Bosphorus Strait and along northern Turkey and its central part lost up to 30 mm more water to evapotranspiration due to its increased intensity in August.
- Rainfall rate fell up to 75 mm sort of its usual August level across most of the northern half of Balkan Peninsula, along northeastern Turkey up to 125 mm less, while it was a wet month with up to 75 mm higher amount of rain in areas along the southern Adriatic Sea and northwestern Hungary, locally along the southern Adriatic Sea up to 150 mm higher. With little overlap of drier precipitation conditions and increased evapotranspiration across the region, the spread and the extent of drier or wetter than normal surface water balance followed the above-mentioned precipitation conditions across the region, except for wider central Turkey where average precipitation amount and higher than normal evapotranspiration resulted in, for this part of the country, unusually dry surface water balance levels at this time of the year.

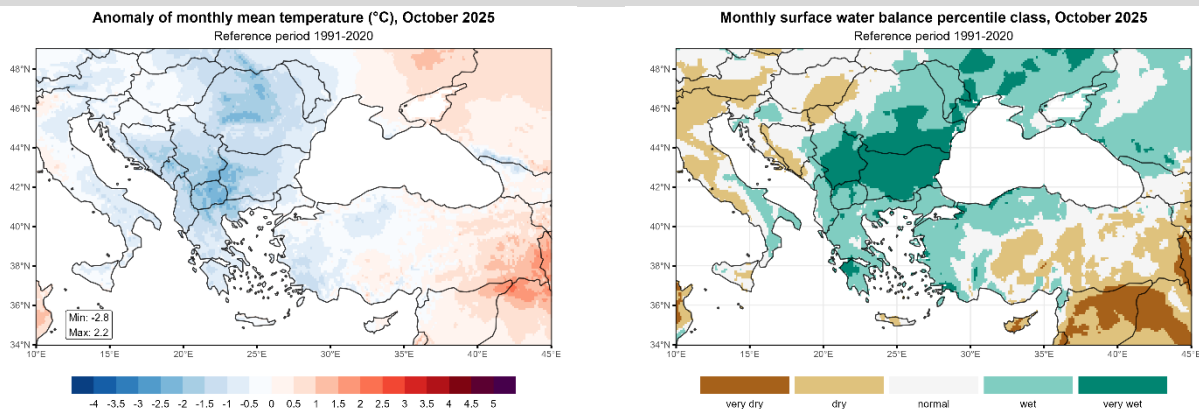
## SEPTEMBER 2025



- Across most of Turkey except its south, air temperatures returned to the normal again in September or were even slightly colder than usual. Although in southern Turkey they remained on average up to 2 °C above the long-term mean, they presented a welcome drop, influenced by the cold from the north-east, from the well above-average air temperatures experienced in summer months. Across Balkan Peninsula, air temperatures again rose to at least 2 °C above the long-term mean, over its wider central part up to 3.5 °C higher than the long-term September average. Some areas in a belt from southern Romania towards southern Turkey recorded up to 30 mm higher than usual evapotranspiration.

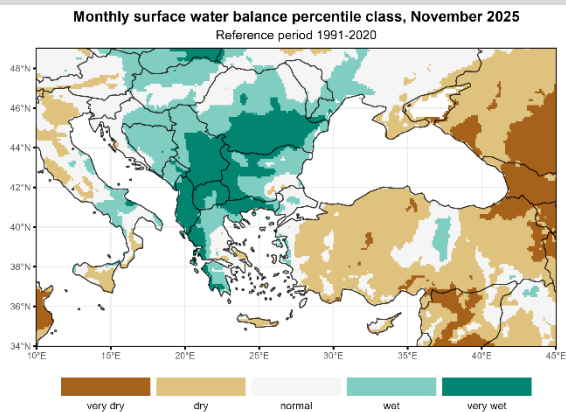
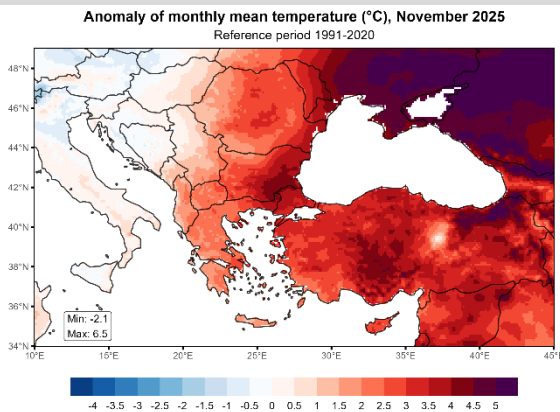
- Wider central Balkan Peninsula continued to receive lesser than usual amount of rain, in September up to 75 mm especially between continental Croatia, southwestern half of Romania and northern Greece, except in central Serbia which after four consecutive drier-than-normal months, from May to August, recorded average precipitation rate in September. After high precipitation amount in August, noticeable lack of rain was this month present in western Balkan Peninsula, from southern Montenegro to northwestern Greece, where September brought up to 125 mm lesser than usual amount of rain.
- Due to normal evapotranspiration, the surface water balance anomalies corresponded to precipitation anomalies across most of the region, only in eastern Balkan Peninsula between southern half of Romania and Aegean Turkey surface water balance anomaly was aggravated by an increased evapotranspiration, leaving this part of the region with additional up to 90 mm of surface water balance deficit. In this area, this was the fourth month in a row, since June, experiencing at least 60 mm of monthly deficit.

### OCTOBER 2025



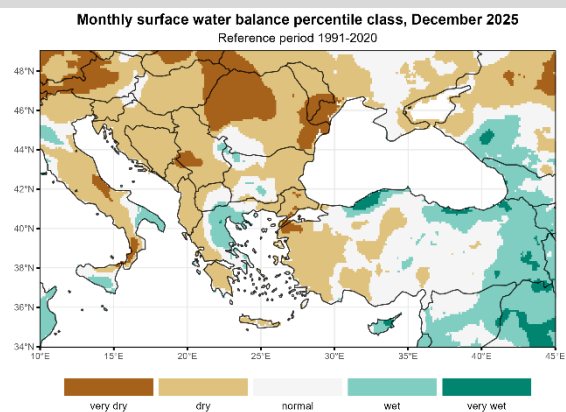
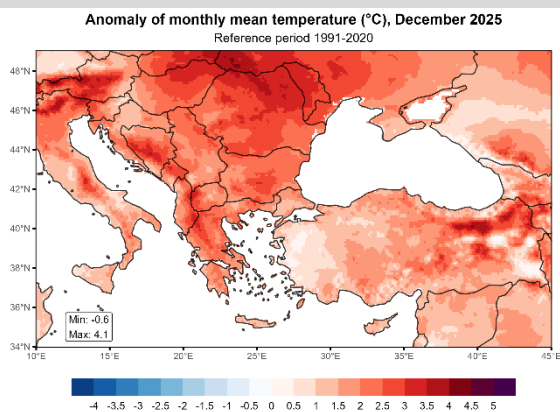
- In southeastern Turkey air temperatures remained on average up to 1.5 °C above the long-term also in October, continuing the run of, to a greater or lesser degree, warmer than normal months since March. Meanwhile, heat ceased completely across the rest of the region as October proved a cold month across most of Balkan Peninsula and Aegean Turkey, bringing at best the average air temperatures but mostly they were up to 1.5 °C colder than usual, over its central and northeastern part up to 2.5 °C colder.
- Colder than usual conditions overlapped with higher-than-normal precipitation levels, meaning that Serbia, Bulgaria and southern Romania, which previously experienced deficient amount of rain over at least four consecutive months, now received well above average rainfall rate. In times of up to 15 mm lesser than usual evapotranspiration, the accumulated monthly surface water balance was across the central belt of Balkan Peninsula, from Albania to coastal Romania, 90–180 mm higher than normal for October. Up to 150 mm of surface water balance surplus was present also over southwestern Greece, and up to 90 mm along the western and northwestern coastal Turkey. Contrary, areas where October was of average air temperatures or even warmer than normal recorded slightly drier October, with surface water balance deficit of up to 60 mm, in southern Bosnia and Herzegovina October rainfall deficit reached up to 120 mm.
- According to SPEI, October was the first month since May during which the region did overall not experience considerable levels of dry surface water balance conditions, except for few localised areas scattered across the region where SPEI indicated moderately dry surface water balance levels. During months in between, there was always some greater part of the region experiencing severely or extremely dry surface water balance conditions.

## NOVEMBER 2025



- Unusually warm weather returned to the region, bringing air temperatures on average as high as 4.5–6 °C above the long-term November mean, making November one of the warmest of the 30-year record in southeastern Moldova, southeastern Bulgaria, across central third of Turkey and its north-east. The rest of the area east of the belt from western Hungary to Montenegro also experienced unusually warm November where monthly mean was mostly at least 2 °C above the long-term mean.
- Across much of the region, October precipitation conditions continued throughout November as well, leaving the central part of Balkan Peninsula between Albania and southern Romania with much higher-than-normal rainfall amount, which then gradually declined towards the north-west and south-east. Precipitation level exceeded monthly mean by 75–150 mm in this part of the region, due to heavy rainfall rate between Montenegro and western Greece by 250–550 mm. Only western half of Turkey experienced the opposite precipitation conditions to those in October, as drier conditions prevailed and much of the outer areas of Turkey recorded up to 75 mm, locally in the north-east up to 150 mm of deficit.

## DECEMBER 2025

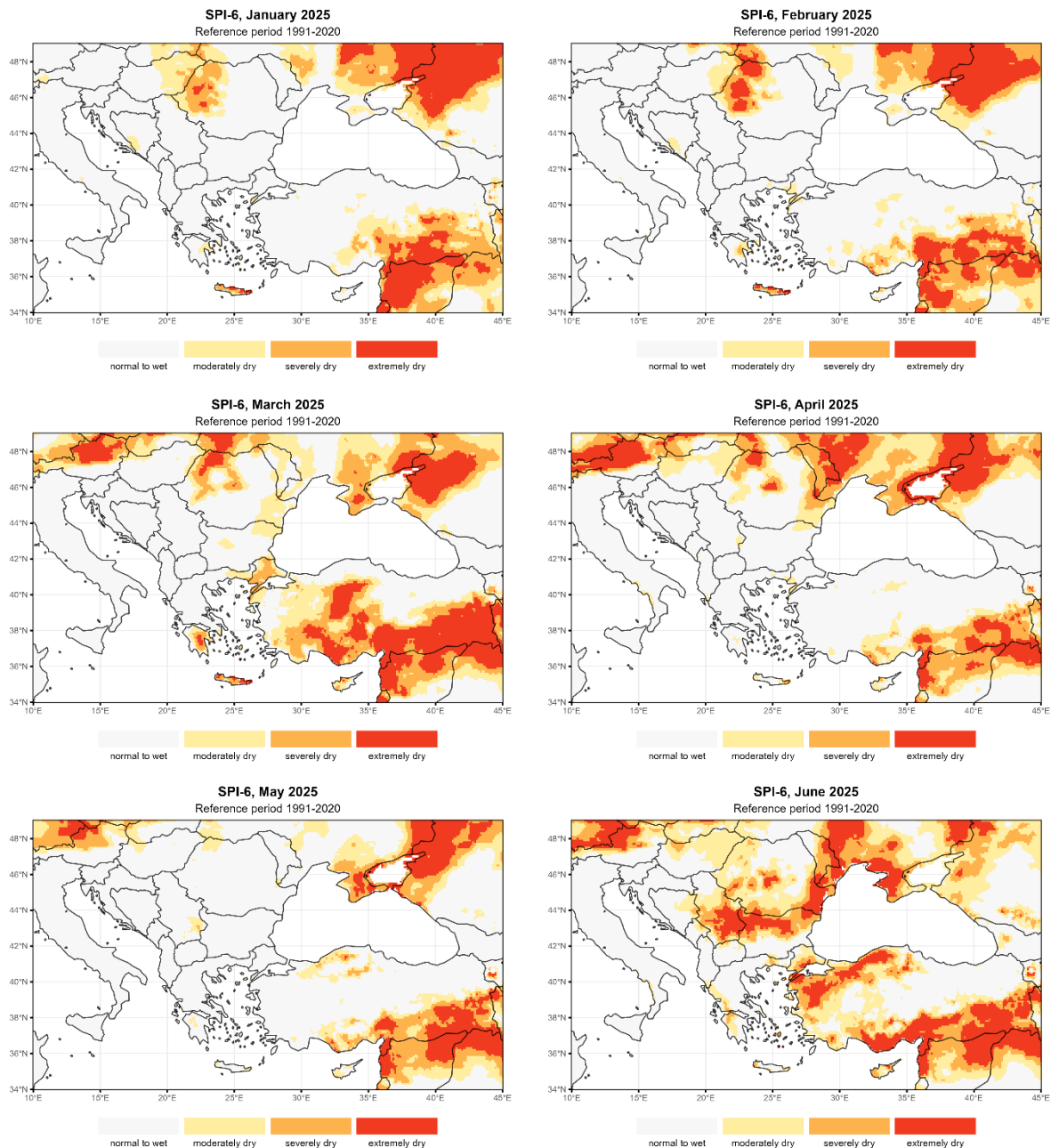


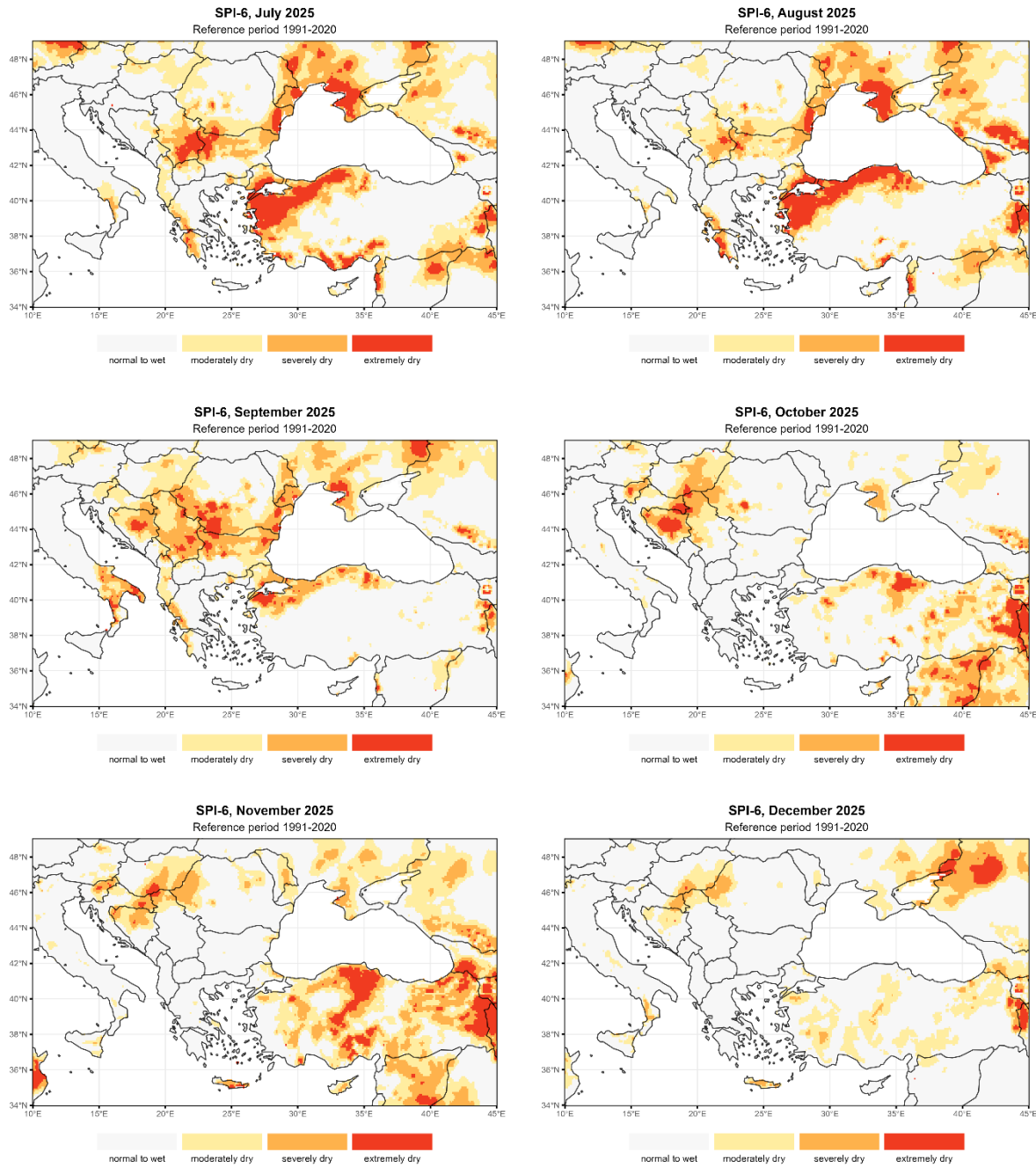
- December too was warmer than normal, with unusually high air temperatures spread across the entire region. Anomalies were the highest, 3–4 °C, across northeastern Turkey, northernmost Balkan Peninsula and from central Bosnia and Herzegovina towards northern Greece, while December mean was over the rest of the Balkan Peninsula and central third of Turkey at least 1.5 °C higher than normal.
- In addition to being unusually warm, December was across most of Balkan Peninsula and western third of Turkey also unusually dry for this time of the year. Monthly precipitation rate was up to 75 mm lower than expected, while areas over all along the Adriatic Sea and western Greece recorded between 125 and 200 mm of precipitation deficit, in Montenegro up to 250 mm less than usual for December. Locally in northern Aegean Greece, December continued to be wetter than normal, while northern and southeastern Turkey recorded surplus of 50–125 mm. For southeastern Turkey, this month's rainfall surplus was generally the first experienced since April.

## STANDARDIZED PRECIPITATION INDEX

Figures below show standardized precipitation index (**SPI**). Unitless SPI values present the deviation of the accumulated precipitations from the long-term mean, suggesting how (in) frequent the occurrence of such value was in the past. SPI values lower than -1 that go as low as -1.5, -2 or below -2 shall correspond respectively to the occurrence of such precipitation deficit in 9.2 %, 4.4 % or 2.3 % of the time in a long-term series of data and are arbitrary grouped into drought intensity classes labelled as moderate, severe or extreme. Monthly SPI indicates drought conditions that may have impact on vegetation health, while 3-monthly SPI can be indicative also for surface water status.

SPI maps at one- and three-monthly scales throughout 2025, which can be used for indication of meteorological and agricultural drought respectively, have already been published in individual monthly bulletins. Maps below show **6-monthly SPI throughout 2025**, which give indications about hydrological conditions throughout the year.





As a result of severely to extremely dry rainfall conditions between August and October 2024 across vast part of central Balkan Peninsula and again in first two months of 2025, the **year 2025 began** with severely to extremely dry hydrological conditions over greater western Romania over to Hungary, while similarly extreme hydrological conditions developed also over southern Aegean Sea area and southeastern quarter of Turkey due to insufficient precipitation conditions throughout autumn months of 2024 and extreme rainfall deficit in January 2025. Across northern parts of the region, the extent of extremely dry hydrological conditions peaked in February, while those over the southern areas of the region lasted onward and further intensified and expanded throughout the entire southern half of Turkey, its central area and over to southern Greece on the account of extremely dry March as well.

Throughout **April and May**, every part of the region at some point experienced a period of favourable or even wetter than normal rainfall amount, which acted as a welcome replenishment of hydrological reserves

to greater or lesser degree. Based on SPI ranking of the 6-monthly accumulative precipitation levels, previously severe to extreme hydrological conditions ceased completely over the Balkan Peninsula by May, while across the southern part of the region they receded in their extent to wider southeastern Turkey where they remained severe to extreme. In northernmost Turkey, however, hydrological conditions began to worsen in May as moderately to severely dry ones began to develop.

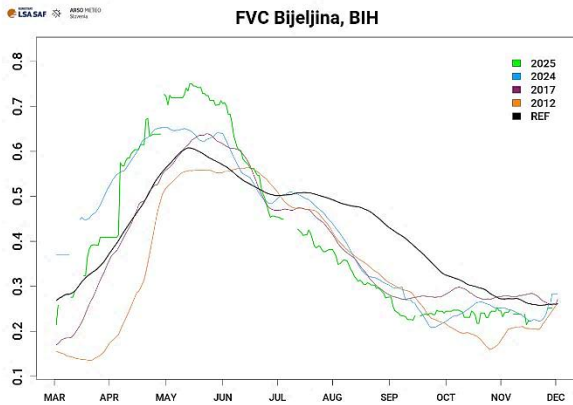
**Summer months and into September** saw general worsening of the hydrological conditions across central and eastern parts of Balkan Peninsula and over Turkey. While lack of rain prevailed across central-western Serbia and northern Turkey from May onward already, continuous run of months with severe to extreme lack of rain throughout summer and September, along with unfavourably high air temperatures, caused the development of vast extent of extreme hydrological drought beginning in June over wider central and eastern Balkan Peninsula including Serbia, Bulgaria, Romania and Moldova, as well as northwestern Turkey and its wider south-east. By September, moderate to severe hydrological drought developed also across extensive part of central Balkan Peninsula, from Hungary and Bosnia and Herzegovina to Albania and the Black Sea. Of the main 6-monthly period of the vegetation season, between April and September, the greatest factor to hydrological drought was prolonged and intense lack of rain between June and August when drought conditions reached its maximum extent in scope and severity, excluding only the areas in the western coastal belt of Balkan Peninsula, much of Greece and the very central part of Turkey.

October was the first month since November and December 2024 when almost no part of the region experienced any considerable lack of rain. Similarly favourable in terms of replenishment of hydrological reserves was November as well, thus hydrological drought generally eased across the region throughout **the rest of autumn**, with severe but locally still extreme hydrological conditions prevailing only over central-northern Balkan Peninsula, from Bosnia and Herzegovina over to Hungary, and over scattered areas across eastern half of Turkey. Accumulative rainfall amount of the June–November period was unfavourable over much of Turkey, revealing again a greater extent of accumulative lack of rain, although excluding dry June and moving onward into precipitation favourable December, extreme hydrological drought ceased completely in Turkey by the end of the year, limited only to the scattered areas experiencing moderate hydrological drought. On the other hand, hydrological drought across central Balkan Peninsula continued to decline throughout autumn months and was by December limited only to the moderate to severe level over the core part of the Pannonian Basin, between eastern Croatia and western Romania.

## REMOTE SENSING – FRACTION OF VEGETATION COVER

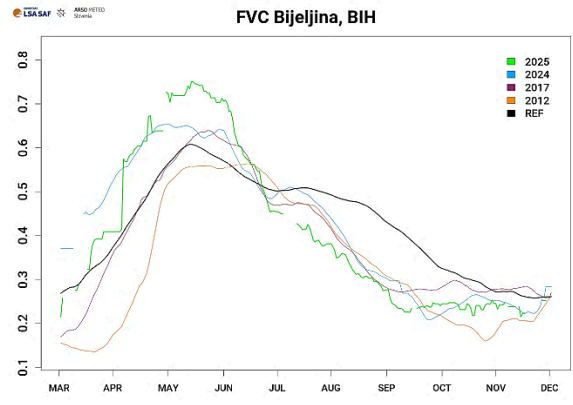
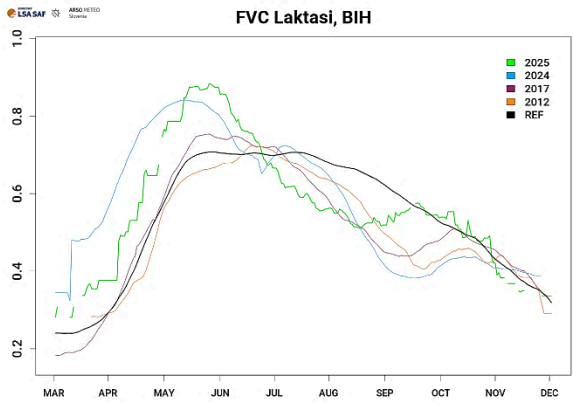
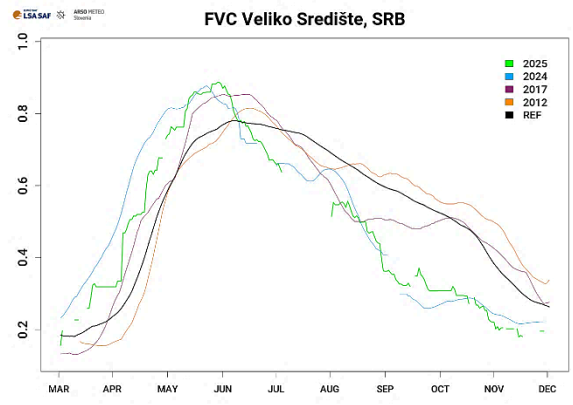
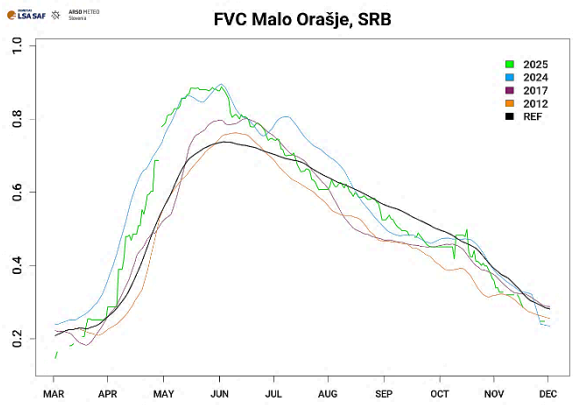
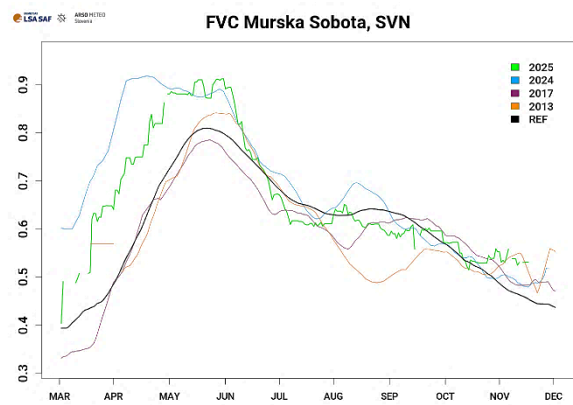
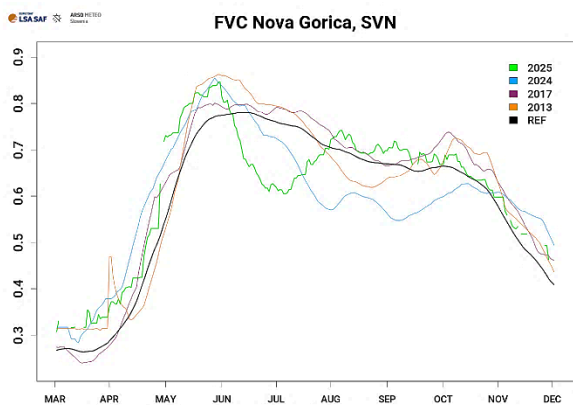
**Fraction of vegetation cover (FVC)** is a vegetation index based on remote sensing (satellite) measurements and shows fraction of the total pixel area covered by green vegetation. As such, it has in combination with atmospheric parameters proved useful also for drought monitoring. Values vary according to the vegetation stage and possible damages, including those by extreme weather conditions. In general, they are low at the beginning of the growing season, highest at full seasonal development, then drop with vegetation senescence. Line shape depends on the sort of vegetation at the given location.

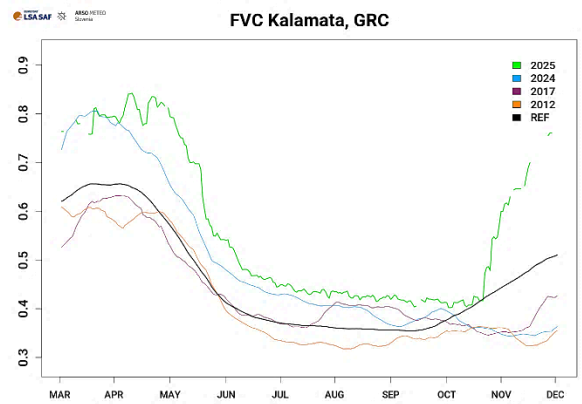
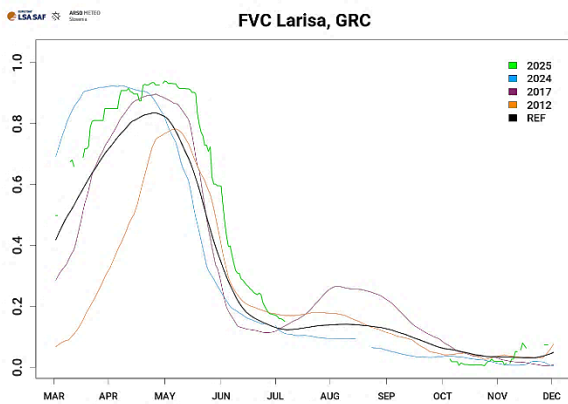
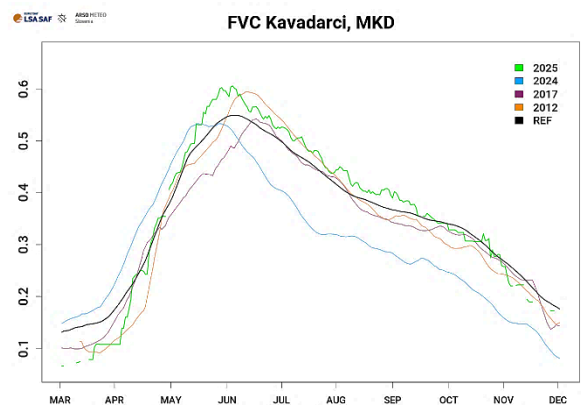
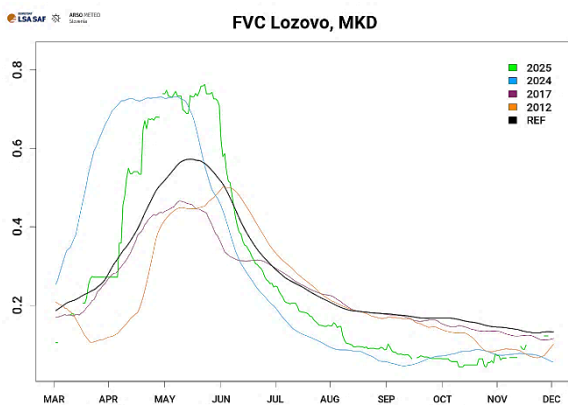
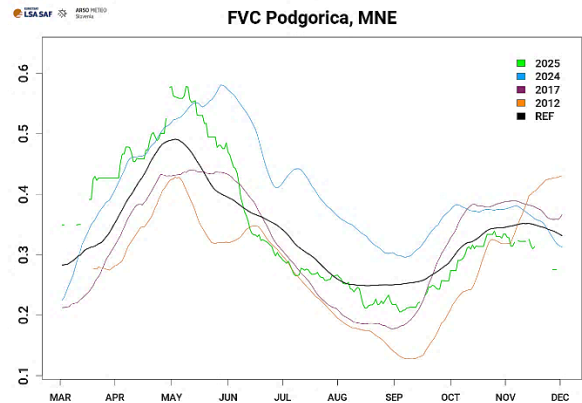
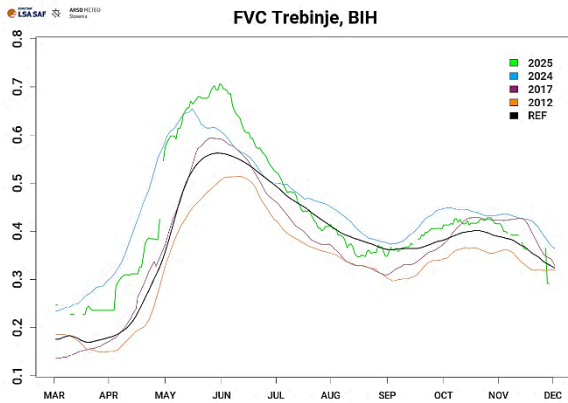
Graphs below present **vegetation development** from **March to November 2025** at 13 locations across southeastern Europe, as indicated by the FVC index. FVC values for year 2025 are presented in green line. Graphs also include reference line (2004–2024) in black, and lines in light blue (year 2024), magenta (year 2017) and orange (year 2012, or 2013 for Slovenia) for comparison. Possible missing values or their sharp decline may be a result of prolonged cloudy weather, extreme weather events, snow blanket or changes to product by the product provider.



Graphs of FVC at the following locations  
(from top left to bottom right):

- Romania – Bucovina;
- Slovenia – Nova Gorica, Murska Sobota;
- Serbia – Malo Orasje, Veliko Srediste;
- Bosnia and Herzegovina – Laktasi, Bijeljina, Trebinje;
- Montenegro – Podgorica;
- North Macedonia – Lozovo, Kavadarci;
- Greece – Larisa, Kalamata.





## DROUGHT IMPACT REPORTS

Main impacts of drought that occurred across the region between April and September were summarised and referenced in corresponding DMCSEE monthly bulletins. This section focuses on those with known link to drought that showed in later months of the year, **between October and December 2025**.

### HUNGARY

Experts agree that Hungarian agriculture suffered hundreds of billions of forints in damage in 2025. The hot summer and lack of precipitation caused the greatest damage in arable **crop production**. The government established the drought protection operational group in May and adopted an action plan. As part of this, it contributed 4.7 billion forints to the work of the water management directorates, as a result of which, according to the Ministry of Agriculture, the actual drought damage was smaller than it would have been based on weather conditions without protection. According to data from the Ministry of Agriculture, the

actual extent of the drought damage in 2025 reached about a third of the damage recorded in the historic drought in 2022. To help farmers remain solvent, the government adopted also some post-drought damage compensation measures, i. a. tax cuts. <sup>[1, 2]</sup>

## ROMANIA

According to the Timis County Agricultural Directorate, a pedological and atmospheric **drought calamity was declared** in the county in mid-July, with most affected being spring crops. For corn, the calamity ranged between 60 and 100 % over the area of 32,375 ha. For sunflower, the calamity was 40–100 % over the area of 19,645 ha, and soybean reported similar calamities, of 40–90 %, over the area of 5,433 ha. <sup>[1]</sup> Due to drought damage at the level of natural disaster, the government established an aid for over 100,000 farmers across the country affected by drought, in the form of subsidies from the Agricultural Payments and Intervention Agency. <sup>[2, 3]</sup> Due to spring frost and prolonged drought, **walnut** orchards across several regions in the country did reportedly not bear any fruit in autumn, and where they have, the walnuts were small and pitiless. Some regions reported 30–40 % of decline in yield, in other losses were between 80 and 100 %. <sup>[4]</sup> According to the National Forestry Administration, almost 165,000 ha of **forests** in Romania were affected by drought in the first nine months of 2025, with the total volume of compromised trees estimated at over 2.077 million m<sup>3</sup>. Prolonged pedological drought throughout 2025 caused a significant number of trees to enter premature senescence and further into physiological decline, increasing their vulnerability to diseases and pest attacks. <sup>[5]</sup>

Although the water level of **Lake Taut**, which was greatly affected by drought last year, was observed to increase throughout autumn, its volume remained below 50 % of the normal for this time of the year and it would take another four to five months of rain to recover the lost water. <sup>[6]</sup> Severe hydrological conditions of the year 2025 significantly affected the **energy production** capacity of Hidroelectrica, Romania's largest electricity producer. The total energy production in 2025 was reduced by 15 %, with the first nine months of the year seeing significant production declines, decisively influencing the annual results. <sup>[7]</sup>

## SERBIA

In Serbia, the year 2025 was marked by spring frosts, a record dry June and one of the hottest and driest summers ever measured in Serbia, which left drastic consequences in agriculture. Almost the only positive case was wheat production, which in 2025 had about a quarter higher yield than the ten-year average. On the other hand, **soybean, corn and sugar beet** suffered greatly due to summer drought, with yield in 2025 as one of the worst in recent years and far below the 10-year average. In 2025, soybean production was 44 % lower, corn production 27 % lower, and sugar beet 17 % lower compared to the 2015-2024 average. The economic damage of the failed crops was estimated at around 520 mio EUR. The biggest factor to the damage sustained was June with practically no precipitation, as this is the period when summer crops grow most intensively, so the lack of precipitation directly affected the yield. <sup>[1, 2, 3, 4]</sup> **Raspberry** production was in Arilje region, western Serbia, one of the country's major raspberry production sites, halved due to drought that lasted from mid-May to the beginning of September, in some cases yields were even five to ten times lower than normal. <sup>[5]</sup> **Winegrowing** in the Banat region, northern Serbia was in 2025 reportedly one of the most demanding in the last decade. Although the predictions about the reduced yield unfortunately came true, the winegrowers emphasize that despite the reduced quantity, the quality of the grapes was surprisingly good. <sup>[6]</sup> Drought and expensive production of **potato** reduced its yield in Vlasina, southern Serbia, and in addition affected its quality as well, as the potatoes were smaller and softer. <sup>[7]</sup> Dry land and lack of rain caused difficulties to farmers in soil preparation for the coming vegetation season, thus **autumn sowing** could not yet be done in full. Although November rain improved the conditions, moisture deficit in general remained significant and some farmers could not complete the sowing of autumn crops even in mid-November. <sup>[8, 9]</sup>

The Serbian Electric Power Company announced that due to extremely unfavourable hydrological conditions in the second dry year in a row, **electricity production** in their hydroelectric power plants was in 2025 the lowest in their history. The main cause was the lack of precipitation (snow, rain) in Germany, Austria, Slovenia, Bosnia and Herzegovina, Montenegro, which affected the water levels of the Drina and Danube rivers in Serbia, as well as extremely low precipitation amount over these basins in Serbia in the last 18 months. Altogether the hydropower production in 2025 was about 25 % lower than last year, and as much as 40 % lower than in 2023. <sup>[10]</sup>

### **BOSNIA AND HERZEGOVINA**

In mid-December, the Orasje City Civil Protection Headquarters in northeastern Bosnia and Herzegovina lifted the state of **natural disaster due to drought**. According to the report, the total damage caused to citizens and legal entities amounted to nearly 4 mio KM, with citizens reporting damage in the amount of almost 2.5 mio KM. The drought affected 1,580 households through 440 reports from citizens and 36 reports from legal entities. <sup>[1]</sup>

### **TURKEY**

In Yozgat region in central Turkey, which is among the top ten provinces in grain production and ranks 5<sup>th</sup> in Turkey in terms of arable land, wheat **sowing was delayed** until mid-November due to drought continuing in autumn months. <sup>[1]</sup> In Hatay, southern Turkey, **peanut** harvest carried out in December showed that the yield was halved due to drought. <sup>[2]</sup>

In December, livestock breeders from Bitlis in southeastern Turkey, one of Turkey's provinces with the heaviest snowfall, continued to graze their animals on the mountain slopes and pastures near villages due to **lacking snow cover** and lasting lack of new precipitation. <sup>[3]</sup> Most of Azap Lake in Aydin, western Turkey, which has the status of "**Wetland** of National Importance" and covers the area of 320 ha, dried up due to drought by the end of November. <sup>[4]</sup> About the same time, in Lake Belevi, the largest freshwater lake in the Kucuk Menderes Delta, western Turkey, the water level dropped significantly, resulting in the death of numerous **fish**. <sup>[5]</sup> The Asboga Lake, located in the Eastern Anatolia region otherwise abundant in water, receded by about 50–60 m by early November due to lasting rainfall deficit, revealing that the lake has shrunk by 30 %. The lake is an important resting place for **migratory birds**. <sup>[6]</sup>

In December, controlled manner of **water supply** was introduced in Ankara, the country's capital city, due to prolonged drought. In final days of the year, daily water cuts lasted up to 12 hours in 11 districts due to water shortages and low water pressure as a result of drought. <sup>[7, 8]</sup> In Izmir, western Turkey, which also continued to experience dwindling water resources, the water cuts that began on August 6<sup>th</sup> and were initially implemented every three days in 13 districts were in mid-December implemented daily under the new schedule. <sup>[9, 10]</sup> The water level in Istanbul's dams dropped to 17 % in December, with such low levels never so far recorded in Istanbul's dams in December. With this record low and facing severe water shortages, calls for water conservation were reiterated. <sup>[11]</sup> In Corum's Alaca district, central-northern Turkey, the **Kochisar Dam** saw its usable water level drop to only 0.4 % due to drought. According to the data from the General Directorate of Meteorology, Corum's rainfall level in the hydrological year of 2025 were the lowest in the last 65 years. <sup>[12]</sup>

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### **Methodology**

DMCSEE Drought monitoring bulletin is prepared based on climatological reanalysis, remote-sensing data and online media reports. Calculations of meteorological variables and indices (air temperature, precipitation, evapotranspiration, surface water balance, SPI, SPEI, EDDI) are based on the European Centre for Medium-Range Weather Forecasts (ECMWF) ERA5-Land monthly averaged data (<https://cds.climate.copernicus.eu/datasets/reanalysis-era5-land-monthly-means?tab=overview>), using 1991-2020 as a reference period. Remote-sensing product is based on the European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT) Land SAF MSG Daily Fraction of Vegetation Cover [LSA-421] product (<https://lsa-saf.eumetsat.int/en/data/products/vegetation/#FVC>), presented for the confirmed locations, using long-term averages from 2004 to the last full calendar year (currently up to and including 2024). Information on drought impacts is obtained from freely available online reports of national authorities and media newspapers.