

Fires in European Union

Wildfires raging from west to east and across northern, central and southern European countries offer clear evidence of the effects of climate change. Not only affected areas are expanding, but also the fire season is getting considerably longer as extending beyond the traditional summer months. The trend of these unprecedented fires occurs not only in Europe, Middle East and North Africa, but across the globe, and they become more frequent and intense because of climate change.

Changes in fire regime due to increased fire frequency and/or extension caused by climate change or other factors is defined by rapid fire spread, intense burning, long-range fire spotting and unpredictable shifts. This can compromise vegetation stability to fire in low fire-frequency areas but also in high-frequency areas with resilient vegetation, challenging traditional measures on fire fighting.

In 2022, the EU experienced the highest number of fires since 2006. This is in addition to what is expected to be recorded as the most severe drought in Europe in 500 years. Although the area burnt by wildfires was remarkably extensive (8372 km²)¹, the number of victims was limited. The prevention measures implemented by the EU and its Member States and the enhanced preparedness and firefighting operations of the fire management services among other factors, could have had an influence on this.

At the same time, fires cause widespread economic impacts. Preliminary analysis of economic damage by fires in the EU estimate losses of around 2.5 Billion Euro.²

In 2022, fires were mapped in 26 of the EU27 countries (all except Luxembourg), burning 837 212³ ha in total. This is well above the amount recorded in 2021 (449 342 ha). There were two main peaks in the year: a first one in March when a very high number of fires occurred in almost every country, and a second larger peak in July from fewer but larger fires (Figure 1) .

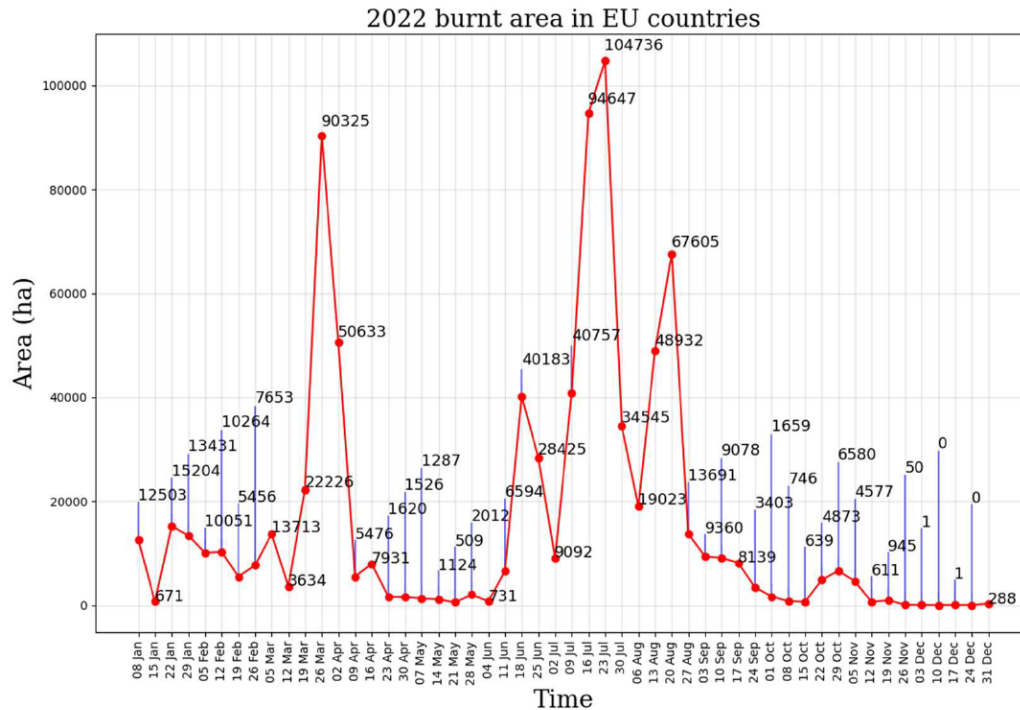
Cross-observation of recent meteorological conditions in Spain and wildfire statistics reveals a scenario in which the importance of large fires is increasingly high, as a consequence of climate change. These large fires are much destructive than ordinary wildfires, frequently overpassing the prevention and suppression means.

Natura2000 network sites, which cover Europe's most valuable and threatened species and habitats both on land and at sea, where particularly affected. Burnt areas within them accounted for 44% of the total burnt areas in the EU . Three quarters of the damage to protected areas came from three countries: Spain, Romania and Portugal.

¹ Estimation based on remote sensing

² Estimation based on the EFFIS Rapid Damage Assessment [EFFIS - Welcome to EFFIS \(europa.eu\)](https://www.effis.europa.eu/)

³ Estimation based on remote sensing



Burnt area weekly evolution in EU27 countries in 2022.

Figure 1. 2022 burnt area in EU countries Source: San-Miguel-Ayanz, J., Durrant, T., Boca, R., Maianti, P., Libertá, G., Oom, D., Branco, A., de Rigo, D., Ferrari, D., Roglia, E., Scionti, N., 2023. Advance report on Forest Fires in Europe, Middle East and North Africa 2022, Publications Office of the European Union, Luxembourg, 2023, doi:10.2760/091540, JRC133215.

The trend of wildfires in Europe, possibly aggravated by increased fire danger conditions under existing climate change scenarios, calls for a comprehensive and coordinated approach to prevent and mitigate wildfires. The trend of wildfires in Europe, possibly aggravated by increased fire danger conditions under existing climate change scenarios, calls for a comprehensive and coordinated approach to prevent and mitigate wildfires. One major challenge is ensuring that the practice of fire management and its associated governance are making full use of science-based findings and innovations, over traditional practices. Specific efforts should be devoted to improving knowledge transfer to and exchange with practitioners and decision-makers,

It is also necessary to reiterate that around 96% of wildfires in the EU are caused by human actions. This means that prevention measures must be stepped up and include a strong focus on raising the awareness of key stakeholders - including rural actors in direct contact with natural areas, as well as the enlarged population segment living in the so-called wildland urban interface. Advancing our understanding of people's perception of fire management and policies is a prerequisite for their successful implementation. The preparedness of agencies and communities to deal with those events requires adequate evaluation of risk and timely communication through the development of early-warning

systems, as well as training of personnel for efficient emergency operations, including evacuation or confinement plans.

The development of early warning and information systems for wildfires can pave the way to evidence-based policy-making to reduce the impacts and the risk.

Actions

The protection of forests in the EU falls primarily under the competence of its member states. There are several ways, however, in which the EU contributes to preventing and responding in the case of forest fires. At the policy level, the new EU Strategy on Adaptation to Climate Change, published in March 2021, sets out a coherent and holistic policy framework on European Forests. Moreover, the 2021 new EU Forest Strategy⁴ provides the basis for enhanced fire prevention and climate resilience of our forests, building on the guidelines for prevention of wildfires⁵. These guidelines include managing vegetation to avoid the accumulation of fuels on the ground.

At the operational level, the EU reinforced the Union Civil Protection Mechanism (UCPM) and created rescEU to protect citizens from disasters and manage emerging risks. rescEU has established a new European reserve of resources (the 'rescEU reserve') which includes a fleet of firefighting planes and helicopters, medical evacuation planes, and a stockpile of medical items and field hospitals that can respond to health emergencies. In 2022, the Commission financed the stand-by availability of a rescEU firefighting fleet which is at the disposal of other Member States in case of an emergency.

The Emergency Response Coordination Centre (ERCC) is the heart of the EU Civil Protection Mechanism and coordinates the delivery of assistance to disaster-stricken countries, such as relief items, expertise, civil protection teams and specialised equipment. In the context of forest fires, the ERCC is supported by national and European monitoring services, including the European Forest Fire Information System (EFFIS). EFFIS provides the European Commission services and the European Parliament with updated and reliable information on wildland fires in Europe. Since 1998, EFFIS is supported by a network of experts from the countries in what is called the Expert Group on Forest Fires, which is registered under the Secretariat General of the European Commission. Currently, this group consists of experts from 43 countries in European, Middle East and North African countries. In 2015, EFFIS became one of the components of the Emergency Management Services in the EU Copernicus program.

⁴ [Forest strategy \(europa.eu\)](https://europa.eu/european-council/story/eu-forest-strategy)

⁵ [Land-based wildfire prevention - Publications Office of the EU \(europa.eu\)](https://publications.ec.europa.eu/publication-detail/-/publication/11111111-1111-1111-1111-111111111111)

Additional details on the EU most affected country in 2022

Portugal experienced the worst fire season since 2017 and it was the third most affected EU country, although the total mapped burnt area of 112 063 ha from 1 236 fires was still only a fraction of the damage occurring in 2017. Almost all of the damage occurred in the summer months of July and August. However, the highest number of fires was observed in January, although they were generally small, so the burnt area was low. During the summer there were several very large fires, including two in the Beiras e Serra da Estrela province in August that covered over 15 000 and 10 000 ha respectively .

A further 13 fires over 1 000 ha were recorded, and 14 more exceeded 500 ha. 41 089 ha of the mapped total occurred on Natura2000 sites, corresponding to 37% of the total area burnt, and 0.015 % of the total Natura2000 areas in Portugal

Romania had to cope in 2022 with the worst fire season in over a decade, with a total mapped burnt area of 162 518 ha from 1 432 fires, making it also the second most affected EU country after Spain. Over two-thirds of this damage occurred in a single month (March) and also included Romania's three largest fires, which were all in Tulcea province in the east of the country, and which were all more than 5 000 ha . 20 other fires were larger than 1 000 ha and a further 28 exceeded 500 ha. In total, 102 659 ha (63%) of the mapped burnt area was on Natura2000 sites, representing 0.012% of the total Natura2000 area of Romania.

Spain experienced the worst fire season in over a decade. Like Portugal, the season was notable for a large number of relatively small fires in January, but the main damage of the year occurred in the summer months linked to extreme weather conditions (long heat waves with strong winds) . The largest fire was in Tábara municipality in Zamora province in July, and covered 32 528 ha. A second fire in Zamora in June was just over 28 000 ha, and the third, mapped in Castellón, was almost 20 000 ha . An additional five fires over 10 000 ha were mapped, 36 exceeded 1 000 ha and 20 others were greater than 500 ha . Of the total burnt area of 315 705 ha mapped in 2022, 133 329 ha occurred on Natura2000 sites, the highest amount recorded in any country in 2022, and a third of all the protected land burnt across Europe in 2022. This corresponds to 42% of the total area burned and 0.004% of the Natura2000 areas in Spain.