

Europe's Fiery Future: Rethinking Wildfire Policy

As the US and Australia grapple with the climate crisis, the writing is on the wall for Europe. Wildfires exacerbated by climate change and problematic land management policies and practices are forcing emergency services, land managers and policymakers to adapt to a fiery future.

By Christine Eriksen

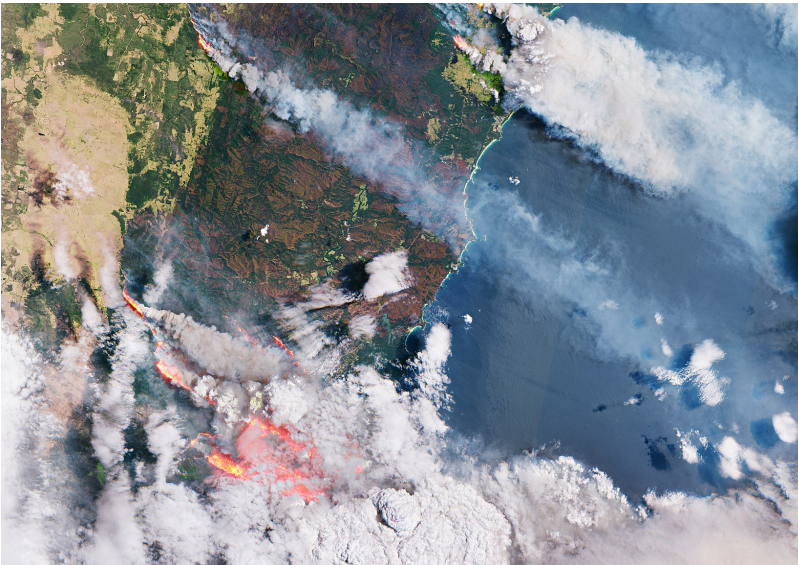
As 2020 dawned, southeast Australia was ablaze. Starting earlier than usual, consuming more acres of land, and causing worse smoke pollution than any other fire season in recorded history, many considered the wildfires as being 'unprecedented'. Unprecedented yet oddly familiar. Fire is an endemic force in Australia, shaping its history, ecology and culture. Yet, firestorms during the past decade have increased in scale, frequency and level of devastation. In New South Wales alone, the 2019–2020 fire season burned 13 million acres, killed 26 people, and damaged or destroyed more than 10,000 structures.¹ Tens of thousands of people had their electricity supply interrupted, many having no power during the sweltering hot New Year period. Fire behavior has also become more intense and unpredictable, rendering firefighting resources and techniques inadequate. These trends apply to North America and Europe, too.

The unprecedented, yet oddly familiar feeling started to repeat itself in the US West in August when the first of many fires ignited. On 15 September 2020, a headline in the Los Angeles Times read, "The Worst Fire Season Ever. Again." The 'unprecedented' aspect

this year is the social impact and the sheer number of intense, fast moving, and large wildfires burning across California, Oregon and Washington. By 7 October 2020, more than 8,300 wildfires had burned over 4 million acres in California alone, with 31 confirmed fatalities and over 8,800 damaged and destroyed structures.² At their peak, the air-quality reached hazardous levels and the sky turned

Key Points

- The climate crisis is revealing a positive feedback loop caused by the interplay between four key factors: land use, fire exclusion, tree dieback, and a hotter and drier climate.
- Air-quality control has prevented many hazard-reduction burns. Yet, smoke for a limited period, in a limited area, during a planned prescribed burn is preferable to the deadly smoke levels experienced during this year's firestorms.
- Recent wildfires and their social impacts are the harbinger of the future unless emergency services, land managers and policymakers start to listen to, and act on, local and indigenous knowledge and scientific evidence centering the need for sustainable fuel reduction strategies and traditional fire regimes.



Australia's New South Wales south coast in flames and charred, 31 December 2019. Image contains modified Copernicus Sentinel data 2019. ESA / CC BY-SA 3.0 IGO

an apocalyptic orange color, as a thick layer of smoke stretching from southern California to Canada concealed the sun. The sense of helpless and impending doom was truly staggering. In the grips of despair, the Governor of California, Gavin Newsom appealed to President Donald Trump to recognize the impacts of climate change and the inadequacy of resources to manage the land more sustainably to prevent future firestorms. To no avail. As the climate crisis unfolds, President Trump's Federal Government keeps its head firmly in the sand, prioritizing economic profit and a finger-pointing blame-game over scientific evidence and environmental management needs.³

The European continent is no stranger to wildfires either, but recent years have seen a sharp increase in the frequency and intensity of wildfires (also known as 'forest fires') in southern, central and northern Europe alike. In fact, as recent catastrophic wildfires in Portugal (2017), Greece (2018), Spain (2019), and the unprecedented wildfires in Sweden (2014, 2018) show, many parts of Europe are becoming the fire-prone landscapes most people would tend to associate with Australia and the US West. The devastation experienced in Australia and the US West this year is the possible fiery future that awaits Europe unless emergency services, land managers and policymakers start to listen to, and act on, local and indigenous knowledge and scientific evidence centering the need for sustainable fuel reduction strategies and traditional fire regimes to cope with a fiery future.

How did we reach this uncharted territory?

The climate crisis is revealing how the intimate relationship between land use, fire exclusion, tree dieback, and a hotter and drier climate has produced a positive feedback

loop. As an example, take a contributor to the conflagrations in the US West – the lodgepole pine. In the Cascade Range linking northern California with Canada, logging and the exclusion of wildfires since the mid-19th Century have enabled the lodgepole to become the dominant tree species instead of the once giant ponderosa pines. Unlike the ponderosa with its fire-resistant thick bark and tall crowns, the densely packed lodgepole pines burn easily, spread fire and are quick to reseed burned areas. The suppression of wildfire by land managers, and the stifling of the natural alliance between plants and fire, has resulted in a build-up of flammable fuel that is contributing to the catastrophic wildfires currently burning in the region. Fire-ravaged slopes, in turn, are prone to increased debris flows, erosion and avalanches during subsequent rain- and snowfall.

Fire exclusion has also made North American forests more prone to diseases that naturally occurring fire regimes and colder winters once kept in check. The mountain pine bark beetle traditionally held an important role in the lifecycle of forests by attacking old or weakened trees, thereby speeding up the development of a younger forest. After a century of wildfire suppression, and in the felt presence of a warming climate and less snow on the ground, an unchecked epidemic of pine bark beetles are ravaging these forests. A beetle smaller than a grain of rice is killing giants of the forest. An overwhelming number of dead trees now stand like matches waiting to burn across the North American continent. Similar trends are predicted for many forests in Europe due to hotter and drier summers, and a reduced snowpack area and duration in winter, which lead to higher tree mortality rates, more fuel, more high-fire-danger weather and more intense fire behavior. Any dieback of trees also contributes directly to climate change by altering forest carbon dynamics. Tree mortality decreases carbon uptake and increases carbon emissions as the dead trees decay, upsetting the role of forests in the carbon-climate balance. And so, the positive feedback loop continues.

Moreover, rural abandonment has caused a loss of local environmental knowledge and less fuel management as part of traditional farming practices. The problem is further exacerbated by 'urban migrants' choosing to live in these flammable areas in search of better lifestyles and/or affordable housing but with no or little connection to the land. Apart from the obvious exposure to the threat of wildfires, the added source of fuel and associated headaches for emergency services attempting to keep these at-risk communities safe, there are other less tangible but important consequences of this urban expansion. It has

inhibited fuel reduction via natural and prescribed burning regimes, mainly due to the introduction of stricter air-quality regulations and concerns that fires will escape containment lines.

The climate crisis is making it painfully clear that smoke for a limited period, in a limited area, during a prescribed burn is preferable to the deadly smoke levels experienced during this year's firestorms. Estimations attribute 417 premature deaths to wildfire smoke in eastern Australia between October 2019 and February 2020, and early predictions estimate at least 1,200 excess deaths in California due to wildfire smoke between August and September 2020.⁴ The marketing of air as a health-and-wellness amenity to people who can afford to build or buy climate-controlled homes, or power air-conditioning units (with generators when wildfires result in power outages), highlights how people marginalized for social, economic or systemic reasons are disproportionately impacted by the climate crisis.⁵ As a society, we have yet to learn how to live with, and adequately legislate against practices that contribute to, chronic smoke conditions.

The writing on the wall for Europe

The total economic cost of weather and climate-related extremes exceeded 453 billion Euros between 1980 and 2017 in the EEA member countries.⁶ This calculation does not include the intangible costs to everyday functionality, physical and mental health, and damaged cultural heritage and ecosystems. For EU Member States, this amounted to 83 per cent of monetary losses for this period. Thirty per cent of all requests for assistance through the EU's Civil Protection Mechanism (UCPM) between 2007 and 2019 were in response to wildfires⁷ – a trend that reflects both the extensive land area covered by forests in Europe (43 per cent / 182 million hectares) and the increasing frequency and intensity of wildfires with climate change.

Understandably, there has been a public outcry in the media, as well as within governance circles and civil protection agencies, after particularly catastrophic wildfires in recent years – all of which have coincided with record droughts and heatwaves. The European Union responded in 2019 via its UCPM by establishing and co-financing a reserve (rescEU) of firefighting aircrafts, resources and experts, who are on standby to assist in an emergency. In 2020, EUSALP – the EU Strategy for the Alpine Region comprising seven countries, including Liechtenstein and Switzerland – published a white paper on the state of knowledge, future challenges and options

for integrated wildfire management in the Alps. It highlighted two main challenges: the changing socio-economic conditions, such as rural abandonment and intensified recreational activities, and the changing environment – especially climate change. People are rightly worried, questioning if this is the 'new normal'. It is. In January 2020, the European Environment Agency predicted more severe fire weather, longer fire seasons and a substantial expansion of the fire-prone area in most regions of Europe.

The way forward

Progressive policy and knowledge sharing initiatives are already happening in response to the increasing frequency and intensity of wildfires in Europe. At an international level, the EU has strengthened the UCPM's capacities for disaster cooperation, mitigating and response across geographical borders and policy domains. The creation of the Agency for Integrated Rural Fire Management (AGIF) in Portugal is an example of a national directive. Non-profit initiatives with a global-reach are also developing, like the Pau Costa Foundation in Spain connecting a network of experts and civil society to share knowledge, improve risk awareness and influence the prevention of wildfires through fire ecology, such as reducing the fuel load by reinstating traditional farming approaches like grazing by ruminants.

Yet, surprisingly little research has examined the societal challenges of the climate crisis in the context of wildfires in Europe. Here, Europe can learn from hard-won

Further Reading

Christine Eriksen / Susan Ballard, *Alliances in the Anthropocene: Fire, Plants, and People* (Singapore: Palgrave Macmillan, 2020).

A comprehensive examination of how human impacts on the planetary system are being felt at all levels, from the geological and the arboreal to the atmospheric. From Indigenous ecocultural burning and wildfire to nuclear fire, the authors show how relationships come to be and are likely to change.

Stephen Pyne, "Historic perspective on wildfires: What defines a significant event?" *San Francisco Chronicle*, 14.09.2020.

A thought-provoking overview of the social, cultural and political reasons why the 2020 US wildfires might, but probably will not make a difference to how we manage our environment and respond to the climate crisis.

EUSALP Action Group 8, *Forest Fires in the Alps – State of Knowledge, Future Challenges and Options for an Integrated Fire Management* (2020).

An overview of, and proposed solutions to, expected fire regime changes in the European Alps and the associated costs to firefighting, civil protection measures and post-fire restoration.

policy and management lessons highlighted by research in Australia and North America. It is well known that local environmental knowledge, risk perceptions and communication, land usage, urban planning, and preparedness behavior can aid the capacity of individuals, society and civil protection agencies to mitigate and respond to the wildfire threat, and to recover when disaster strikes. Lessons range from the time-tested value of traditional indigenous land management and local farming practices that include sustainable fuel management and burning regimes, retrofitting homes and upholding fire-resilient building codes, crafting gardens as firebreaks, warning systems and community engagement initiatives made more efficient by an awareness of gendered risk engagement, understanding motivations that underpin civilian ingress/egress in fire zones, and the role of insurance in both aiding and inhibiting short and long-term recovery, to the consequences of systemic social injustices and climate change denial in government funding initiatives.

For example, reinstating alternative local fuel management and prescribed burning practices are important land management tools in the gigantic effort required to reestablish and maintain healthy ecosystems. However, it necessitates careful planning and integration of local, indigenous and scientific knowledge in order to avoid knee-jerk reactions that, in hindsight, prove problematic, such as the target of burning five per cent of public land annually introduced after Australia's catastrophic Black Saturday bushfires in 2009.⁸ The recently announced "National Prescribed Fire Act of 2020" in the USA would do well to heed such lessons. There is a certain irony to the recognition of prescribed burning for the valuable tool it is, at a time when the window for prescribed burning is getting smaller due to longer fire seasons. Longer fire seasons that overlap across hemispheres also places added strain on fire-fighting resources traditionally shared between North America and Australia during times of need.

The silver lining of the climate crisis is the growing recognition of indigenous fire knowledge and their time-tested land stewardship practices.⁹ The recommendations handed down by the NSW Bushfire Inquiry in July 2020 included the involvement of indigenous people and the value of their eco-cultural fire practices in managing our fiery future. Similar initiatives are underway in the US West.¹⁰

What does this teach us about coexisting with fire – whether in Australia, North America or Europe? How we manage the land and where we live matter. Local and indigenous environmental knowledge that understands the diverse, interconnecting aspects of a landscape are crucial to sustainable land stewardship. Knowing the difference between good and bad fire regimes is important. Endemic vegetation species in fire-prone landscapes often have a symbiotic relationship with fire. Homes built in fire-prone landscapes is another source of fuel unless construction follows fire-resilient building codes. Vegetation – trees in particular, play a vital role in the carbon-climate balance. Recent wildfires and their social impacts are the harbinger of the future unless emergency services, land managers and policymakers start to listen to, and act on, local and indigenous knowledge and scientific evidence centering the need for sustainable fuel reduction strategies and traditional fire regimes to adapt to a fiery future.

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