

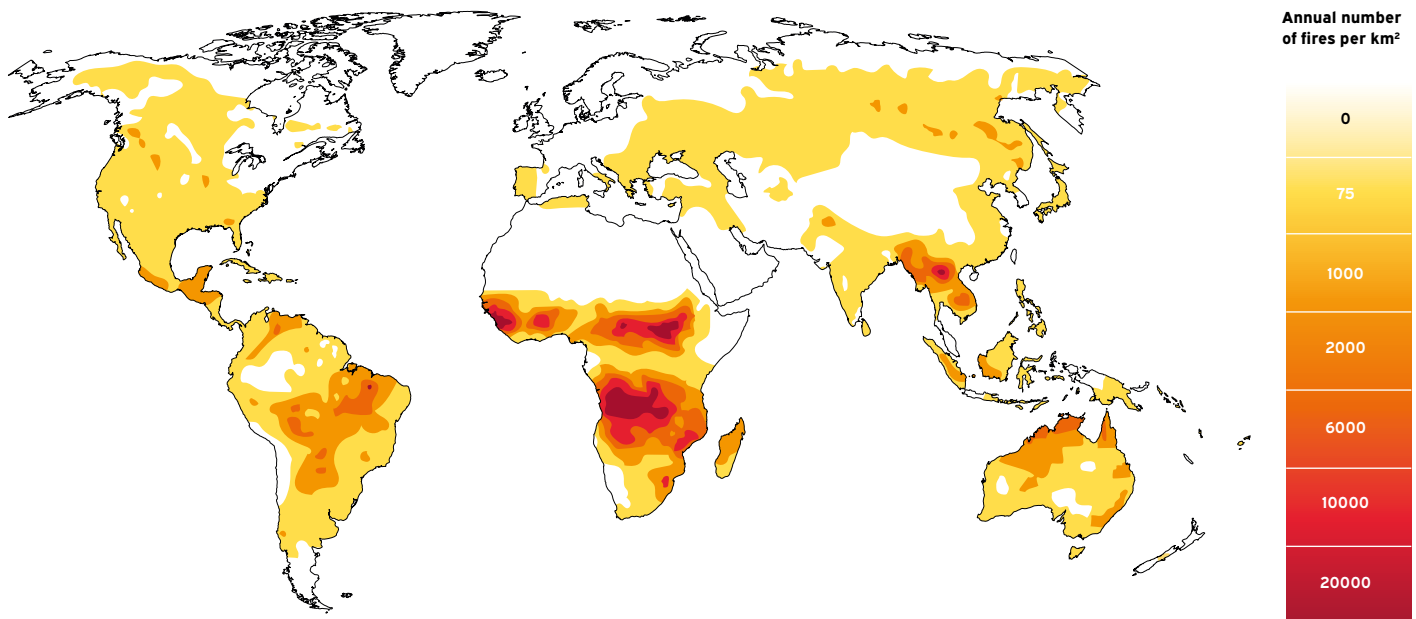
Going up in smoke: how livestock keeping can reduce wildfires



In recent years there have been devastating wildfires across the world. Wildfire incidence is increasing with climate change, and wildfires are predicted to increase by 50% by the end of the centuryⁱ. Such intense, uncontrolled wildfires are massively damaging to environments and to people, involving multiple deaths – including among firefighters - and widespread destruction of property.

Annual numbers of vegetation fires (landscape fires and wildfires) observed per km², 2000-2020ⁱⁱ

Source: NASA 2020 / Map by Miguel Castillo Soto/University of Chile, 2021



What is the cause? Climate change is an important driver. There are more frequent periods of intense heat that may ignite fires, and wind storms can fan the flames. But a fire will only burn if there is flammable material. In many environments there has been a build-up of combustible biomass. This results in hot fires at times of the year that cause the maximum damage. Such fires can result in catastrophic biodiversity losses, killing off many animals and plants, and result in huge emissions of carbon, as happened in Australia in 2020ⁱⁱⁱ.

In many settings, it is the lack of grazing that results in this build-up of dangerous fire loads and (perhaps counterintuitively) the lack of well-managed fires. A common response to the increase in wildfires is to invest in fire suppression strategies. This can make matters worse, as excluding livestock, for example, can increase fire loads.

In rangeland ecologies, fire is important for conservation, but it must be limited and controlled, and this requires grazing.

FIRE AND GRAZING: ESSENTIAL PARTNERS

Regular fires are essential for ecosystem health in rangelands. But they must be ‘cold’ fires that are controlled. Burning in the hot, dry season can be dangerous, especially if spread by winds. In rangelands, fires facilitate germination, enhance species conservation, open up patches for vegetation regeneration, create areas of focused fertility and so on. Fires, together with grazing, have created many biodiverse rangeland ecosystems across the world.

FIRES IN SAVANNAS

The Nylsvley studies in South Africa challenged the view of a stable savanna, amenable to simple management interventions. This long-term study showed how such ecosystems are not in long-term equilibrium; there are multiple stable states influenced by the interactions of rainfall, vegetation growth, herbivory and fire. The effects of fires depend on their timing, intensity and the fire-tolerance of the vegetation. Studies demonstrated how fires have a major influence on carbon dynamics in savannas, with frequent fires being a major source of carbon loss. Ecological analyses showed how fire is a major driver of change, with highly heterogeneous effects over space and time^{iv}.

livestock over the years, with urban areas and farmlands encroaching on what were once grazing lands.

The same story could be told across Mediterranean Europe, but also in Australia and the USA. Even in wetter areas such as Ireland, local authorities are hiring shepherds and sheep^{vi} to graze areas near towns to reduce fire hazards. Fire prevention is unquestionably better than dealing with fires after they break out.

PASTORALISTS AS FIRE GUARDS

To respond to the risks of wildfire, a more integrated approach is needed. To reduce the risk of fire, it is much more effective to use animals to reduce the fire load through grazing than investing in expensive firebreaks or risking the lives of forest guards and firefighters. If exotic trees are planted, the implications for fire ecology should be central to any assessment, as the fire risks can be high.

More extensively-grazed livestock with more people looking after them will mean less fire. Subsidies should be geared towards encouraging people to return to sustainable livestock keeping, rather than supporting the intensification of livestock systems^{vii}. For example, policies could support livestock production and environmental management skills in pastoral or shepherd schools^{viii}. Policies to provide incentives to return to the countryside, to repopulate the landscape and support a viable pastoralism will be essential in the battle against wildfire risk.

We must learn to live with fire^{ix}, and increasingly so in more places due to climate change. Suppressing or just fighting fires is a loser's game. In meeting the challenge of wildfires, supporting pastoral systems is likely to be much more successful than just focusing on fire suppression and more firefighters. Preventing all fires is impossible, and indeed undesirable, but with skilled livestock keepers at the heart of any wildfire policy, the chances of managing fire successfully will be increased.

WHY THE DECLINE IN PASTORALISM CAN INCREASE THE RISK OF FIRES

In Greece, devastating wildfires have increased in recent years. In 2021, houses on the island of Evia near Athens were destroyed, and fires swept through many areas on the mainland Mani peninsula. However, long-term data suggest that hot spells in fact have not increased significantly over time. So what has happened?

A recent study^v shows that in all areas subject to dangerous fires, notably those on fringes of towns, pastoral populations have declined significantly. This has meant less grazing, more biomass and greater fire risk. In some of the areas that were once grazed, forest plantations – containing highly flammable exotic trees such as eucalyptus and pines – have replaced communal grazing, adding to the problem.

The decline in pastoralism in such areas has been exacerbated by subsidy policies that have favoured more intensive production, yet have not helped with investment in pastoral areas. The result has been an ageing shepherd population and massive depopulation of both people and

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Find out more

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