

## New research shows alpine grazing does not reduce blazing

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**The scale and impact, both economic and ecological, of recent bushfire disasters demands a rethink of fire management strategies. A controversial approach receiving more attention internationally is the use of large grazing animals to reduce fuel loads.**



Credit: [Guo Chai Lim](#)

But research we [published recently](#) shows cattle grazing does little to reduce Australia's most destructive bushfires.

There are few specific examples of this management intervention being used in Australia. The exception is cattle grazing in the Victorian High Country, part of the Australian Alps. This has been controversial, pitting pastoralists against environmentalists, and scientists against scientists [scientists against scientists](#).

It raises questions about [acceptable and unacceptable](#) land uses in national parks. And it raises the issue of Australian cultural heritage, including the perpetuation of an iconic 'Man from Snowy River' cultural tradition of summer pasturing of cattle in the Australian Alps.

Proponents of grazing within the Alpine National Park claim 'grazing reduces blazing'. The clear public message is that the severe fires seen in Australia's alpine forests in recent years can be reduced in extent, intensity, and ultimately damaging effects by the continuation of cattle grazing.

But environmentalists point to the degradation cattle cause to alpine ecosystems by spreading weeds, triggering erosion, trampling bogs and fouling streams.

Some scientific studies have shown that there is [no link between grazing and reduced fire severity](#) but the generality of these findings [has been disputed](#).

This debate involves an unusual intersection of scientific, environmental, legal and political dimensions. The Victorian Labor Government banned grazing in the Alpine National Park in 2005 because of environmental concerns. When the Coalition came to power in Victoria in 2010, they proposed resolving this issue with a grazing trial of 400 head of cattle per year to investigate hypothesised fire mitigation.

This trial was then blocked by the then Labor Federal Environment Minister on the grounds it would have an unacceptable impact on endangered species under the Environment Protection and Biodiversity Conservation Act.

A Federal Court case brought by the Victorian government subsequently found the Federal Environment Minister acted appropriately. Grazing is still banned within the Park.

In this context, we tried a ‘natural experiment’ to discover whether cattle grazing can reduce blazing. We [surveyed](#) over 11,400 sq km of the Victorian Alps by analysing satellite images of the area. We looked at vegetation maps, looked back in time using historical satellite pictures, and took advantage of the cessation of grazing this decade and the extensive area burnt by fires over this period.

To implement our study as a classical experiment – for example by manipulating grazing pressure and imposing experimental fires – would be completely impractical, and prohibitively expensive given the same geographical scale and the risks of application of extensive high-severity fires. It would also be unethical given the potential threats to biodiversity, and under current legislation, unlawful.

We overlaid maps of crown scorch derived from satellite imagery following large bushfires in 2002/03 and 2006/07 with the location of pastoral leases. Crown scorch is a measure of fire intensity, based on the degree to which flames have reached a height which enables them to burn the forest canopy. This crown scorch can be detected in satellite images.

Using geospatial statistics we found that cattle grazing had no effect on the likelihood of crown scorch in eucalypt forests and woodlands.

This result is biologically plausible given that cattle are grazing animals, not browsing animals – they do not extensively feed on woody vegetation focusing on grasses instead. Our study is also consistent with previous ground-based studies that have demonstrated the cattle prefer to graze in grassy areas.

Fires in eucalypt forests are important to study, because of their extreme intensity. Fires in these forests are driven by high fuel loads on the forest floor and dense forest structure. Eucalypt forests have the added capacity for fast-moving fires to occur in the upper canopy, carried by the highly flammable leaves. Such fires are nearly impossible for fire fighters to control.

In comparison, fire intensity in grasslands is much lower, fires are easier to control, and grasslands recover rapidly after fires.

Our study does not rule out the use of cattle to manage grassy fuels – this approach may be crucial in tropical savannas, especially where [invasive grasses fuel fires](#) that compromise the ecological integrity of native vegetation.

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