References provided by Environment East Gippsland to Australian Rural & Regional News, 10 February 2022

Science reports-articles-links and summary. Fire issues

Links to items on fires - planned burns being shown to be pointless but destructive in the new pyrocene.

<https://theconversation.com/a-surprising-answer-to-a-hot-question-controlled-burns-often-fail-to-slow-a-bushfire-127022?utm_source=facebook&utm_medium=facebookbutton&fbclid=IwAR3RhF3n9RXEbFFa0z0fFuz59lLc8Ehuu8_nvpNWESzkwkyUZAl6SbuowiQ>

Dr Janet Stanley

<https://theconversation.com/humans-light-85-of-bushfires-and-we-do-virtually-nothing-to-stop-it-126941?fbclid=IwAR3rDvMtnHQWmyEV-dfB20cfAyZASjBTB-EHeR8H45RgU8hhLUT9QNJpT0U>

<https://www.canberratimes.com.au/story/6514176/what-is-the-evidence-behind-hazard-reduction-burning/?fbclid=IwAR1kOxWoIQO-4_3HKHuNQdYK3jxSZrfy19htQbX54kUTYwVwC6Q_317Q_e4>

Greens at fault?

<https://www.theguardian.com/australia-news/2019/nov/12/is-there-really-a-green-conspiracy-to-stop-bushfire-hazard-reduction?fbclid=IwAR1z-GEwJymctQ9679KTa2kXbriQVUwYGxZ3s5AiCEren96SFARQN5bT8Hc>

Dr Trent Penman

<https://www.smh.com.au/environment/hazardreduction-burning-has-limited-benefits-in-curbing-bushfires-researchers-20151016-gkalvt.html?fbclid=IwAR3pT14yuVww_V1R_hUGMfaqjH90fofj4jBx-R55XYnOI64a6nPre2WPt60>

Kingsley Dixon

<https://www.abc.net.au/radionational/programs/scienceshow/controlled-burns-destroy-ecosystems-and-may-not-reduce-fire-risk/11774496?fbclid=IwAR3X6P-N86VlSMg9EBkmnWumg3Z-Xkj-To_Z1TC_ncF5QMW1OPkb7YEnmLQ>

Phillip Zylstra

<https://theconversation.com/new-modelling-on-bushfires-shows-how-they-really-burn-through-an-area-63943?fbclid=IwAR3SbmRbxyUa2ldZ6_ayal1KiIY-7tYhBcH8uCM41cD46Vt8aNgbPk5DExg>

Fact Check - ABC

<https://www.abc.net.au/news/2019-12-20/hazard-reduction-burns-bushfires/11817336?fbclid=IwAR38qQNCF07eqB8mPOPpmHcfDa8M_ZKKT3KPatA5wzRwvueinVoBufn-Vu4>

<https://onlinelibrary.wiley.com/doi/full/10.1111/jbi.12579>

exploring variations in the effectiveness of prescribed burns in south-eastern Australia found that the inconsistency was due to biogeographical variation in fuel types, climatic influences and fire regimes.

[https://www.publish.csiro.au/wf/pdf/WF17070](https://www.publish.csiro.au/wf/pdf/WF17070?fbclid=IwAR0MxSleLIGlmsNbBpJGPd3EU7iLyX0kjZCd5PoCyAAf0oR4mgI8pzImQsA)
those who start the fire owns the fire, not those who own the fuel.

Burning doesn’t stop bushfires. Research

"For 26 out of 30 bioregions in south-east Australia, there is no evidence that prescribed burning has reduced bush fire sizes."
New research is turning this old burning dogma on its head.

Alan McArthur in the 1960s declared his nine data points on a map told us that if we halve the leaf litter – we can halve the speed of the fire.
It has never been backed by evidence, but in the absence of something better it became the bedrock of Australian fire management. One rule for all forests: burn them.

But in the past two hundred years, Australian forests have been getting more fire than at any time in the tens of thousands of years before, and all of the controlled burning is not helping.

Yet every year the claim that more fire is needed never diminishes. And now there's a massive empire within the government that relies on hundreds of millions to burn the forests, they won't ever be interested in science or evidence.

<https://theconversation.com/new-modelling-on-bushfires-shows-how-they-really-burn-through-an-area-63943?fbclid=IwAR0RASCzya5g-z5QOv-L8pCKgmx9SPCubz-pRh-7Q-vglDGNsx-E3-lryZ0>

Planned burns have limited effect - 2015

<https://amp.smh.com.au/environment/hazardreduction-burning-has-limited-benefits-in-curbing-bushfires-researchers-20151016-gkalvt.html?fbclid=IwAR1JiGrY1vKIkr8_HXsUbm4p00mTyXRRLlOKjQCXoPZrfVi_1k5-abWJdKk>

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"Of the up to 60,000 bushfires which occur in Australia annually, it is thought that close to half of these are deliberately lit.

Part of the problem is that prevention isn’t sexy or flamboyant. There are no pictures of “grateful people” who are recovering, or villains to blame.

Prevention success is very hard to measure. How do we know that the tragic event or fire was prevented by the quiet, background work that was undertaken which provided support and treatment for a troubled person?

Accepting that this type of intervention work is effective is hard in a context which requires “measurement”, “indicators”, KPIs and evidence for outcomes."

<https://theconversation.com/we-know-what-starts-fires-are-we-brave-enough-to-prevent-them-19323?fbclid=IwAR3FYEyz1nksonxP3H5UFX0i-xXiLrYam-X1uP1fC1zL8swdIpyVtZmuRRw>

Lyrebirds
"Through that process they reduce the litter fuel load by, on average, 25 per cent, or about 1.6 tonnes per hectare. And we put those figures into a fire behaviour model and found that that level of fuel reduction is enough [that] in low fire-danger weather conditions it excludes fire, fire's not possible under low to moderate conditions. But even in more extreme conditions the fire behaviour will be more moderate, [with] lower rates of spread, lower flame height, so a less intense fire," he said.

<https://www.theage.com.au/national/victoria/not-just-a-pretty-tail-the-lyrebird-is-a-superb-firefighter-20150303-13tg3o.html>

Research paper here:

<http://www.publish.csiro.au/paper/WR14052.htm>

Gibbons et al

Abstract

Losses to life and property from unplanned fires (wildfires) are forecast to increase because of population growth in peri-urban areas and climate change. In response, there have been moves to increase fuel reduction—clearing, prescribed burning, biomass removal and grazing—to afford greater protection to peri-urban communities in fire-prone regions. But how effective are these measures? Severe wildfires in southern Australia in 2009 presented a rare opportunity to address this question empirically. We predicted that modifying several fuels could theoretically reduce house loss by 76%–97%, which would translate to considerably fewer wildfire-related deaths. However, maximum levels of fuel reduction are unlikely to be feasible at every house for logistical and environmental reasons. Significant fuel variables in a logistic regression model we selected to predict house loss were (in order of decreasing effect): (1) the cover of trees and shrubs within 40 m of houses, (2) whether trees and shrubs within 40 m of houses was predominantly remnant or planted, (3) the upwind distance from houses to groups of trees or shrubs, (4) the upwind distance from houses to public forested land (irrespective of whether it was managed for nature conservation or logging), (5) the upwind distance from houses to prescribed burning within 5 years, and (6) the number of buildings or structures within 40 m of houses. All fuel treatments were more effective if undertaken closer to houses. For example, 15% fewer houses were destroyed if prescribed burning occurred at the observed minimum distance from houses (0.5 km) rather than the observed mean distance from houses (8.5 km). Our results imply that a shift in emphasis away from broad-scale fuel-reduction to intensive fuel treatments close to property will more effectively mitigate impacts from wildfires on peri-urban communities.

<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0029212>

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<https://www.infona.pl/resource/bwmeta1.element.elsevier-996f5cfb-bc35-3bba-bfc0-c7a4a3e85f43>

**Abstract**

Thresholds for burning vegetation communities in New South Wales (NSW) are based on plant species’ responses to fire and do not consider other issues such as site attributes or fauna requirements. We investigated knowledge gaps concerning the impact of fire on habitat features of open forests and woodlands, and consider the adequacy of fire management based on the fire responses of flora. The consequences of managing fire at broader scales are complex and this study tests ideas concerning landscape attributes in relation to fire planning and biodiversity conservation. Habitat attributes of long unburnt vegetation were determined at sites with varying time since fire and fuel loads in these communities were measured. Time since fire was the most important variable for explaining the abundance of critical faunal habitat attributes. Tree and log hollows and fallen timber volume were markedly more abu

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<https://www.sciencedaily.com/releases/2019/05/190523104925.htm>

Science News

from research organizations

**Exposure to air pollution before and after birth may affect fundamental cognitive abilities**

Date:

May 23, 2019

Source:

Barcelona Institute for Global Health (ISGlobal)

Summary:

A study finds that exposure to fine particulate matter in the first years of life is associated with poorer performance in working memory and executive attention.

Share:

FULL STORY

stages of life is associated with negative effects on cognitive abilities. A new study led by the Barcelona Institute for Global Health (ISGlobal), a centre supported by "la Caixa," has provided new data: exposure to particulate matter with a diameter of less than 2.5 μm (PM2.5) during pregnancy and the first years of life is associated with a reduction in fundamental cognitive abilities, such as working memory and executive attention.

The study, carried out as part of the BREATHE project, has been published in *Environmental Health Perspectives*. The objective was to build on the knowledge generated by earlier studies carried out by the same team, which found lower levels of cognitive development in children attending schools with higher levels of traffic-related air pollution.

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<https://www.smh.com.au/environment/weather/health-alert-for-sydney-amid-bushfires-and-near-record-heat-20190521-p51ppg.html>

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<https://www.theage.com.au/national/victoria/off-the-dial-thick-smoke-blankets-areas-as-victoria-burns-20190310-p5134c.html?fbclid=IwAR0VoNCvYyV0c0rysasfN00XxSYFLOKpfMiga8dZIfN7WSfgs7CYuRDl974>

Authorities have issued a health warning for children, the elderly and the vulnerable, with the smoke expected to blanket large swathes of eastern Victoria and Melbourne.

Victoria’s State Response Controller Stephanie Rotarangi said firefighters were battling more than a dozen blazes. In addition, they were undertaking back burning to prevent wild fires spreading.

"Controlling these fires is not easy. Some are burning in very difficult terrain, in hard-to-access areas and are also very large in size, such as the Licola fire at 64,000ha,” she said.

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<https://www.smh.com.au/national/no-safe-level-study-links-pm2-5-pollution-to-increased-risk-of-cardiac-arrest-20200128-p53v98.html>