

[Home >> Blog >> Disruption of Natural Processes >> Myths of Prescribed Fire: The Watering Can that Pretends to](#)

June 22, 2021 | By: [Bryant Baker](#) and [Douglas Bevington](#)



Myths of Prescribed Fire: The Watering Can that Pretends to be a River

By [Bryant Baker](#), M.S., Conservation Director, [Los Padres ForestWatch](#)

and [Douglas Bevington, Ph.D.](#), Forest Program Director, [Environment Now](#)

Editors' note: This article originally appeared in the Environment Now foundation's report, ["Working California for Federal Wildfire Policy."](#) Baker and Bevington's piece focuses on California's ecosystems and readers are encouraged to consider their local conditions when assessing the role of prescribed fire. The report includes pieces by experts on other key dimensions of fire issues, including home retrofits for protection.

The use of prescribed fire—intentionally setting fires in forests and other ecosystems under planned conditions—has received significant attention in California and elsewhere in recent years. On the one hand, it is good that there is growing recognition of the role of fire as a necessary part of forests and other ecosystems. On the other hand, current advocacy for large-scale prescribed fire programs is often based on a number of myths that need to be addressed.

[Home](#) / [About](#) / [Rewilding Earth](#) / [Podcast](#) / [Donate](#)

fire policies, we need to face these facts—*Prescribed fire increases fire and smoke. Prescribed fire is not a silver bullet. Prescribed fire retrofits are inefficient. Prescribed fire is inefficient for ecological restoration compared to managed wildfire. Prescribed fire and cultural burning are not the same.*

Prescribed fire increases fire and smoke.

A central myth is that increasing prescribed fire will lead to less fire and smoke overall. Proponents often cite the fact that a portion of a wildfire halted when it encountered a previously burned area, but these are anecdotal. The reality is that wildfires can burn through previously burned areas as soon as eight months later (Moghaddas 2005). Over 106,000 acres within the 2020 LNU Lightning Complex in California had burned just two years prior. As fire researchers have stated, “fuel treatments do not prevent fires” (Martinson 2004). Instead, the main goal of prescribed fire is to somewhat alter subsequent fire behavior, but it does not occur under unfavorable weather conditions. In other words, *prescribed fire is additive to, not subtractive from, wildfire risk*. In instances where prescribed fire has been found to limit wildfire extent, the acreage of a prescribed fire is often offset by subsequent wildfire reduction, with 3-4 units of prescribed fire needed to reduce wildfire by one unit (Moghaddas 2005). The effects of prescribed fire on wildfire behavior fade within a few years. Within as little as 2 or 3 years, understory vegetation can return to levels equal to or greater than levels prior to prescribed burning (Moghaddas 2005). Prescribed fire would need to be reapplied on a regular basis, repeatedly adding fire to many places that other

years in the future. For all these reasons, *increased use of prescribed fire will likely lead to a ne* and Robles 2020).



Popular on Rewilding.org

#52 Around the Campfire; Wilderness Areas and the “Myth(s) of

Privacy - Terms

With that additional fire comes additional smoke. Proposals to implement *landscape-wide prescribed fire* (Hanson 2021; see also p. 12 in this [report](#)). In addition to increasing the total amount of *increases the duration of smoke exposure*. While wildfire smoke is concentrated in the height of prescribed fire would not preclude this—prescribed fires are typically lit in the “shoulder season prescribed fires prolong smoke exposure into times when it would not otherwise occur. There c use prescribed fire, but it should be done knowing that the effect will be an overall increase in tl



Landscape-wide prescribed fire could result in ten times as much smoke. (Sc

Prescribed fire is inefficient for public safety compared to home retrofits.

Prescribed fire is an inefficient and relatively ineffective way to protect homes and communities recently summarized, *“The peer-reviewed evidence is that burning forest miles from houses does not protect them from wildfires, as discussed above, prescribed fires generally do not stop subsequent wildfires, and altering fire intensity does not improve home safety because home ignitions during wildfires are rarely caused by direct contact with high-intensity fire”* (et al. 2017). Instead, home fire-safety retrofits (“home hardening”) offer the most effective ways to protect homes. The resources to help communities with fire-safety retrofits are currently quite limited compared to the resources for prescribed fire and associated “fuel treatments” in wildlands. For example, in California’s 2021 proposed budget, *the funding is directed to “community hardening”* (LAO 2021). While prescribed burning adjacent to homes can provide some benefits, proposals to use large-scale prescribed fire across vast landscapes away from communities are an inefficient way to protect houses when compared with the direct benefits of home retrofits.

Prescribed fire is inefficient for ecological restoration compared to managed wildfire.

One positive outcome of the greater attention on prescribed fire is that it has contributed to greater understanding of forests and other ecosystems, and that currently many forests have a shortage of fire competition. Unfortunately, many advocates for prescribed fire rely on an *outdated “good fire/bad fire” dichotomy*. This false dichotomy, prescribed fires are characterized as “good” because they are associated with low-intensity fire, while wildfires are characterized as “bad” because they are associated with mixed-intensity fire that includes some high-intensity fire. A growing body of research showing that high-intensity fire has always been a part of forests and that prescribed fire benefits by creating excellent wildlife habitat and stimulating nutrient cycling (DellaSala and Harbeck 2017). The type of fire intensity associated with prescribed burning does not generate the habitat creation and the nutrient cycling benefits of high-intensity fire. *type of fire intensity has its role in a mixed-intensity fire regime, and low-intensity fire is not a substitute for high-intensity effects in forests.*

High-intensity fire has always been a part of forests and other ecosystems, and it produces a variety of benefits.
(Source: Doug Bevington)

Another myth repeated by some prescribed advocates is the erroneous notion that forests that now “burn up” in all or mainly high-intensity fire when a wildfire occurs, unless those forests first experience a wildfire of moderate intensity. But multiple studies have shown that areas that experience wildfire following long periods of fire exclusion burn at lower intensity, along with some high-intensity patches that provide the benefits described (Schoonmaker et al. 2012). In fact, research has found that forests with the longest fire exclusion actually burn at lower intensity (Schoonmaker et al. 2012). *is exciting news for efforts at ecological restoration because it means that large-scale prescribed fire is a precondition to allowing mixed-intensity wildfire back into forests.*

Instead, managed wildfire offers a much more efficient way to restore fire to forests that currently lack fire.

economic and practical benefits. Managed wildfire (also known as wildland fire use) differs from only to extinguish a wildfire, fire managers seek to shepherd the fire away from communities and provide ecological benefits. This is less intensive and costly than full suppression. Likewise, managed wildfire because the latter has an extensive planning process and often quite restrictive parameters before ignition, whereas managed wildfire works with natural fire ignitions to provide more fire where it is needed.

This is not to say that prescribed fire does not have a role in fire policy, but instead that role has a limited tool when there are special circumstances where fine-scale control over fire is needed. In this regard, the role of a watering can. A watering can is a good tool for tending the plants around your house. *of irrigation, it would be absurd to propose buying thousands of watering cans. Yet this is basic logic, mainly on prescribed fire to restore fire to vast areas.* Instead, the right way to water a large field is with a watering can—and the most efficient way to restore fire to large landscapes is through managed wildfire. Wildfire currently gets surprisingly little attention in current fire policy discussions, compared to

Prescribed fire can be harmful.

Prescribed fire is sometimes called “good fire” by its proponents, but the reality is that, while it can be good, *prescribed fire can also cause ecological damage.* One example is when prescribed fire policies are used in chaparral, Great Basin sagebrush, or pinyon-juniper woodlands. Research over the past few decades shows that these ecosystems naturally and historically burned infrequently, with several decades or even centuries between fires (e.g., 2006, Keeley and Zedler 2009, Baker and Halsey 2020). In these ecosystems, the use of prescribed fire for slow-growing shrubs to re-establish, and such fire conducted outside of the natural fire season can be harmful to native species while favoring growth of non-native plants that can be more flammable (Parker 1987, Leach 2006).

Prescribed fire can also be harmful in forests, especially when done outside of the main fire season. Unlike with summer forest fires, but prescribed fires are often lit in the spring when bird eggs and nestlings are present (e.g., 2021). There can also be significant ecological damage when logging (“thinning”) is treated as a prescribed fire in forests, this means that Forest Service projects involving prescribed fire can also include substantial logging. Furthermore, logging results in cut vegetation debris that then gets piled up and burned, which is *burning “prescribed fire,”* but it causes sustained burning in a concentrated location that can scorch the forest floor.

produce the beneficial post-fire wildlife habitat created during genuine forest fire restoration (K
harms, projects involving prescribed fire should not be exempted from proper environmental re

The Forest Service is now calling pile burning 'prescribed fire,' but this concentrated burning can

Prescribed fire and cultural burning are not the same.

As attention on prescribed fire has grown in recent years, there has also been broader awareness of applying fire to the land in practices known as cultural burning. Cultural burning was outlawed by policymakers who imposed their wildfire suppression policies on Indigenous peoples. Now some Indigenous people do more cultural burning. Traditionally, burning has been done for a variety of purposes, including for basket-weaving or food production. In this respect, cultural burning is different from current approaches to prescribed fire from the Forest Service and other agencies that focus on forest fire intensity across vast areas. Yet, the Forest Service's approach to prescribed fire often dominates discussions of fire policy. This can result in cultural appropriation that superimposes Forest Service practices on Indigenous practices. It is clear that, prior to modern fire suppression policies, *Native American cultural burning and mixed-use burning were common than they are now* (Odion et al. 2014, 2016, Vachula et al. 2019, Wahl et al. 2019). *They have been suppressed and marginalized by federal and state agencies.*

Conclusion—The disappointing results of prescribed fire

When all is said and done, *the actual results from broad-scale application of prescribed fire would be disappointing.* Those who thought it would reduce fire would instead experience more fire and smoke from larger fires. Those concerned about public safety would realize that communities would have been much safer if they had focused on directly assisting home-outward strategy. Those who want to help ecosystems would realize that managed wildfire would restore fire to forests, whereas prescribed fire is often tied to increased logging. And those who find traditional practices getting appropriated by federal and state agencies. *While prescribed fire has some uses in certain circumstances, it is important to not overstate the role of prescribed fire—a watering can should not be used for more effective and cost-efficient solutions using managed wildfire, traditional cultural burning, or other fire management practices.*

Bryant Baker is the conservation director at [Los Padres ForestWatch](#), a nonprofit organization in California dedicated to protecting the Los Padres National Forest and other public lands in the region. He is also a research associate at the [California Chaparral Institute](#) based in Escondido, California, where he works to increase the public's understanding of chaparral and other shrubland ecosystems along the Pacific Coast. In addition to his conservation work and research, Bryant is a photographer whose work has appeared in books, magazines, and newspapers throughout the region.

Douglas Bevington is forest program director for [Environment Now](#), a grassroots organization focused on forest protection in California. He also serves on the board of directors of the California Grassroots Action in defense of wildlife and wildlands in North America. He is the author of *[Environmentalism: Grassroots Activism from the Spotted Owl to the Polar Bears](#)*.

References

- Baker BC, Halsey RW. 2020. Chaparral conservation. Reference Module in Earth Systems and Environmental Sciences. [Elsevier](#).
- Baker WL. 2006. Fire and Restoration of Sagebrush Ecosystems. [Wildlife Society Bulletin](#) 34(1): 1-10.
- Cohen JD, Stratton RD. 2008. Home destruction examination Grass Valley Fire. USDA R5-TP-0266.
- DellaSala DA, Hanson CT (eds.). 2015. The ecological importance of mixed-severity fires: nature's fire. [Springer](#).
- Fernandes PM. 2015. Empirical Support for the Use of Prescribed Burning as a Fuel Treatment. [California Fire Management](#) 1(1): 1-10.
- Floyd, ML, et al. 2004. Historical and recent fire regimes in Pinon-Juniper woodlands on Mesa Verde National Park. [Southwest Fire](#) 19: 269-289.
- Foley M. 2021. Bushfire risks heat up, demanding new take on fuel load management. [WAtoday](#).

- Hanson CT. 2021. Smokescreen: debunking wildfire myths to save our forests and our climate. [L](#)
- Hunter ME, Robles MD. 2020. Tamm review: The effects of prescribed fire on wildfire regimes ar [Forest Ecology and Management 475](#) 118435.
- Keeley JE, Zedler PH. 2009. Large, high-intensity fire events in southern California shrublands: D [Appl. 19\(1\): 69–94.](#)
- Knapp EE, Schwilk DW, Kane JM, et al. 2007. Role of burning season on initial understory vegetat [conifer forest. Can J For Res 37: 11– 22.](#)
- Korb JE, Johnson NC, Covington WW. 2004. Slash pile burning effects on soil biotic and chemical [recommendations for amelioration. Restor. Ecol. 34\(1\): 177-185.](#)
- Le Fer D, Parker VT. 2005. The effect of seasonality of burn on seed germination in chaparral: th [174.](#)
- Legislative Analyst's Office [California]. 2021. The 2021-22 Budget: Wildfire Resilience Package. F
- Mensing S, Livingston S, and Barker P. 2006. Long-term fire history in Great Basin sagebrush rec [spring sediments, Newark Valley, Nevada. West. N. Am. Nat. 66\(1\), 64–77.](#)
- Miller JD, Skinner CN, Safford HD, Knapp EE, Ramirez CM. 2012. Trends and causes of severity, si [California, USA. Ecological Applications 22: 184–203.](#)
- Odion DC, Hanson CT. 2008. Fire severity in the Sierra Nevada revisited: conclusions robust to fu
- Odion DC, Moritz MA, DellaSala DA. 2010. Alternative community states maintained by fire in th [98 96–105.](#)

Odion DC, Hanson CT, Arsenault A, Baker WL, DellaSala DA, et al. 2014. Examining historical and ponderosa pine and mixed-conifer forests of western North America. PLoS ONE 9(2): e87852.

Odion DC, Hanson CT, Baker WL, DellaSala DA, Williams MA. 2016. Areas of agreement and disagreement in mixed conifer forest fire regimes: a dialogue with Stevens et al.. PLoS ONE 11(5): e0154579.

Omi PN, Martinson EJ. 2004. Effectiveness of Thinning and Prescribed Fire in Reducing Wildfire Severity. PSW-GTR-193.

Parker VT. 1987. Effects of wet-season management burns on chaparral vegetation: implications for the management of rare and endangered plants: proceedings of a California conference on the management of endangered plants, 233–237. California Native Plant Society, Sacramento, CA.

Stephens SL, Moghaddas JJ. 2005. Silvicultural and reserve impacts on potential fire behavior and fire risk: an experience from Sierra Nevada mixed conifer forests. Biological Conservation 125: 369–379.

Syphard AD, Franklin J, Keeley JE. 2006. Simulating the effects of frequent fire on Southern California mixed-conifer forests, 1744–1756.

Syphard AD, Brennan TJ, Keeley JE. 2017. The importance of building construction materials related to wildfire risk during wildfire. International Journal of Disaster Risk Reduction 21: 140–147.

Vachula RS, Russell JM, Huang Y. 2019. Climate exceeded human management as the dominant driver of fire in California's Sierra Nevada. Environ. Res. Lett. 14 104011.

Wahl ER, Zorita E, Trouet V, Taylor AH. 2019. Jet stream dynamics, hydroclimate, and fire in California. PNAS 116: 5393–5398.

Top Featured Image: Source BLM

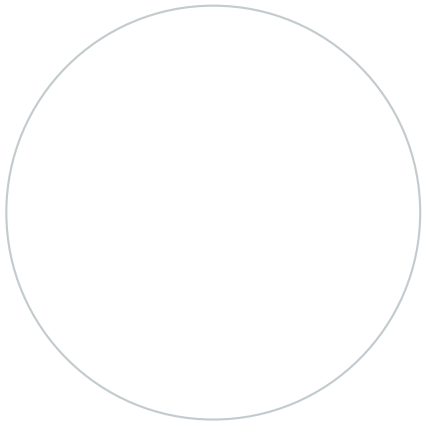
Bryant Baker

Bryant Baker is the conservation director at [Los Padres ForestWatch](#), a nonprofit organization dedicated to protecting the Los Padres National Forest and other public lands in the region. [California Chaparral Institute](#) based in Escondido, California, where he works to broaden other shrubland ecosystems along the Pacific Coast. In addition to his conservation work, his work has appeared in books, magazines, and newspapers throughout the region.

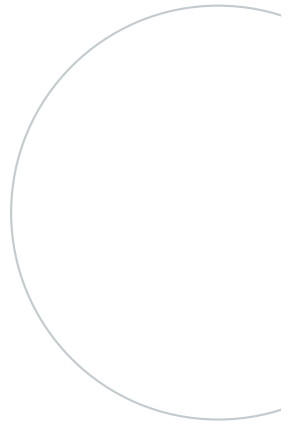
Spread Rewilding Around the Globe!

Tags: [cultural burning](#), [Fire ecology](#), [home fire-safety retrofits](#), [Indian burning](#), [prescribed burnir](#)

Related Rewilding Earth Articles



Rewilding the Wall – Part One



Cracked: The Future of Dams





Restore Lake Pedder: Paddle for Pedder! 2023

☒ Subscribe To Comments On This Article ▼

Write your comment here

B

I

U

S

[+]

2 COMMENTS

Mike C

2 years ago

I appreciate these ideas. However, the reality is that the public is given two options by the two main stakeholders involved in the wildfire issue: massive prescribed burns or massive timber harvests. Which will be better for forest ecology in the long run? That seems to be the question.

<https://rewilding.org/myths-of-prescribed-fire-the-watering-can-that-pretends-to-be-a-river/>

Page 15 of 16

that needs to be addressed.

 0  Reply

Timothy Hart  2 years ago

One man can you take care of 25 acres of forest. Without burning. How many m
stop the burning? I loved your article.

When you burn the forest you burn the life. Forests and animals need debris! W
habitat and sustenance.

 0  Reply

[← Previous post](#)

[Next post →](#)

Rewilding Links

[Contact Rewilding](#)

[Donate](#)

[What Is Rewilding?](#)

[Around The Campfire](#)

[Rewilding News](#)