WebTable 1. Prebunking prominent examples of wildfire misinformation[1] related to in western North American forests.

Misinformation	Description	Consequence of misinformation	Information from more robust knowledge frameworks	Key evidence
Contemporary wildfires are normal	Current wildfires, in terms of size and severity, are within the natural range of variation and therefore not a cause for concern.	Social and political inaction; reinforces status quo.	Contemporary wildfires are abnormal in many ecosystems; those burning in seasonally dry forests are far outside the historical range of variation because of >100 years of fire suppression (leading to buildup and increased landscape continuity of fuels) and climate change, generally burning at a higher severity, in larger patches, and over larger areas.	Hessburg *et al.* 2005, 2019; Falk *et al.* 2011; Safford and Stevens 2017; Singleton *et al.* 2019; Parks and Abatzoglou 2020; Hagmann *et al.* 2021
Forests are resilient and will naturally recover	Forests have always experienced fire and have recovered on their own without human intervention. There is no need for humans to intervene through active management.	Social and political inaction; reinforces status quo; perception that active management is unnecessary and potentially harmful.	Without intervention, many forests will convert to non-forest due to disturbances and climatic warming, unable to naturally recover after high-intensity fires due to inadequate conifer seed availability, failed conifer regeneration, worsening site climate, elevated fuel loads and connectivity from fire exclusion, cyclic reburning, and post-fire dominance of shrubs and grasses. Under rapid climate change, natural recovery processes cannot maintain natural fire and ecosystem processes; appropriate interventions can make many forests more resilient to the effects of climate change or incrementally facilitate some inevitable transitions to non-forest.	Hurteau *et al.* 2014; Stevens-Rumann *et al.* 2018; Davis *et al.* 2019; Young *et al.* 2019; Coop *et al.* 2020; Prichard *et al.* 2021; Rammer *et al.* 2021
Fuel reduction treatments are ineffective	Management efforts ("treatments") to reduce forest fuels, such as thinning, do not reduce fire hazard; they increase fire hazard. Moreover, to the extent that treatments do work, they are ineffective under extreme fire weather.	Social and political inaction; perception that agencies are wasting money and personnel on ineffective strategy.	There is abundant evidence that forest fuel treatments work, particularly those using fire itself, whether prescribed or managed. Such treatments moderate the behaviors of wildfires, even under extreme weather, slowing their spread, lowering fireline intensity, and reducing severity and smoke production in treated areas. Fuel treatments are appropriate in systems that were historically fuel-limited, and in those high severity systems that currently lack typical burned and recovering patchworks of forest and non-forest.	Safford *et al.* 2012; Stephens *et al.* 2012; Prichard and Kennedy 2014; Lydersen *et al.* 2017; Hessburg *et al.* 2019; Prichard *et al.* 2020, 2021; Jones *et al.* 2021; North *et al.* 2021

Fuels reduction is a Trojan horse for commercial logging	Pre-fire fuels reduction is motivated by timber outputs, not fire hazard reduction; the result is serious harm to the land from practices similar to commodity-driven logging.	Distrust[2] in land management agencies.	Mechanical fuels reduction focuses on *retaining* medium and large-sized fire-tolerant trees, to foster their survival of the next fire. Fuels reduction treatments restructure and remove woody material and fuel ladders that built up during fire exclusion, and are often of limited economic value. In other cases, removal of medium-, or large-sized fire-intolerant trees that recruited during fire exclusion is essential to improve fire-tolerant tree survival. The catchphrase "fuels reduction logging" deceptively conflates two very different types of forest management.	Agee and Skinner 2005; Schwilk *et al.* 2009; Stephens *et al.* 2009, 2020, 2021; Collins *et al.* 2014; Prichard *et al.* 2021; Hessburg *et al.* 2022
Contemporary wildfires are beneficial to wildlife	Forest wildlife have developed adaptive behaviors to benefit from wildfire, and since contemporary fires are normal (see above misinformation) it follows that in general they will benefit wildlife and their habitat.	Social and political inaction; reinforces status quo.	Changing fire regimes pose serious threats to the persistence of numerous native wildlife populations. The massive scale of stand-replacing patches typifying contemporary 'megafires' homogenizes landscapes, reduces overall faunal species richness, and eliminates critical habitat for even fire-dependent forest species. Forest wildlife require the long-term persistence of a substantially forested landscape mosaic, as it adapts to climate change and the variability of the fire regime that emerges.	White *et al.* 2019; Kelly *et al.* 2020; Jones and Tingley In Press; Steel *et al.* In Press; Stillman *et al.* 2021

[1]Misinformation statements can be true in certain times or places, but are not generalizable; this is one harm of such statements.

[2]Distrust is not just a consequence of misinformation; misinformation is also a consequence of distrust that can be shaped by past management and policy mistakes. To reduce distrust, it is essential to own past mistakes, seek input, act in good faith, and minimize future mistakes.

WebReferences

Agee JK and Skinner CN. 2005. Basic principles of forest fuel reduction treatments. *For Ecol Manage* **211**: 83–96.

Collins BM, Das AJ, Battles JJ, *et al.* 2014. Beyond reducing fire hazard: fuel treatment impacts on overstory tree survival. *Ecol Appl* **24**: 1879–86.

Coop JD, Parks SA, Stevens-Rumann CS, *et al.* 2020. Wildfire-driven forest conversion in western North American landscapes. *Bioscience* **70**: 659–73.

Davis KT, Dobrowski SZ, Higuera PE, *et al.* 2019. Wildfires and climate change push low-elevation forests across a critical climate threshold for tree regeneration. *Proc Natl Acad Sci* **116**: 6193–8.

Falk DA, Heyerdahl EK, Brown PM, *et al.* 2011. Multi-scale controls of historical forest-fire regimes: New insights from fire-scar networks. *Front Ecol Environ* **9**: 446–54.

Hagmann RK, Hessburg PF, Prichard SJ, *et al.* 2021. Evidence for widespread changes in the structure, composition, and fire regimes of western North American forests. *Ecol Appl* **31**: e02431.

Hessburg PF, Agee JK, and Franklin JF. 2005. Dry forests and wildland fires of the inland Northwest USA: Contrasting the landscape ecology of the pre-settlement and modern eras. *For Ecol Manage* **211**: 117–39.

Hessburg PF, Charnley S, Gray AN, *et al.* 2022. Climate and wildfire adaptation of inland Northwest US forests. *Front Ecol Environ* **20**: 40–8.

Hessburg PF, Miller CL, Parks SA, *et al.* 2019. Climate, environment, and disturbance history govern resilience of western North American forests. *Front Ecol Evol* **7**: 1–27.

Hurteau MD, Bradford JB, Fulé PZ, *et al.* 2014. Climate change, fire management, and ecological services in the southwestern US. *For Ecol Manage* **327**: 280–9.

Jones GM, Keyser AR, Westerling AL, *et al.* 2021. Forest restoration limits megafires and supports species conservation under climate change. *Front Ecol Environ*.

Jones GM and Tingley MW. 2022. Pyrodiversity and biodiversity: a history, synthesis, and outlook. *Divers Distrib* **28**: 386–403.

Kelly LT, Giljohann KM, Duane A, *et al.* 2020. Fire and biodiversity in the Anthropocene. *Science (80-)* **370**: eabb0355.

Lydersen JM, Collins BM, Brooks ML, *et al.* 2017. Evidence of fuels management and fire weather influencing fire severity in an extreme fire event. *Ecol Appl* **27**: 2013–30.

North MP, York RA, Collins BM, *et al.* 2021. Pyrosilviculture needed for landscape resilience of dry western United States forests. *J For* **119**: 520–44.

Parks SA and Abatzoglou JT. 2020. Warmer and drier fire seasons contribute to increases in area burned at high severity in sestern US forests From 1985 to 2017. *Geophys Res Lett* **47**: e2020GL089858.

Prichard SJ, Hessburg PF, Hagmann RK, *et al.* 2021. Adapting western North American forests to climate change and wildfires: 10 common questions. *Ecol Appl* **31**: e02433.

Prichard SJ and Kennedy MC. 2014. Fuel treatments and landform modify landscape patterns of burn severity in an extreme fire event. *Ecol Appl* **24**: 571–90.

Prichard SJ, Povak NA, Kennedy MC, and Peterson DW. 2020. Fuel treatment effectiveness in the context of landform, vegetation, and large, wind-driven wildfires. *Ecol Appl* **30**: e02104.

Rammer W, Braziunas KH, Hansen WD, *et al.* 2021. Widespread regeneration failure in forests of Greater Yellowstone under scenarios of future climate and fire. *Glob Chang Biol* **27**: 4339–51.

Safford HD and Stevens JT. 2017. Natural range of variation for yellow pine and mixed-conifer forests in the Sierra Nevada, Southern Cascades, and Modoc and Inyo National Forests, California , USA. Albany, CA: PSW-GTR-256.

Safford HD, Stevens JT, Merriam K, *et al.* 2012. Fuel treatment effectiveness in California yellow pine and mixed conifer forests. *For Ecol Manage* **274**: 17–28.

Schwilk DW, Keeley JE, Knapp EE, *et al.* 2009. The national Fire and Fire Surrogate study: effects of fuel reduction methods on forest vegetation structure and fuels. *Ecol Appl* **19**: 285–304.

Singleton M, Thode A, Sanchez Meador A, and Iniguez P. 2019. Increasing trends in high-severity fire in the southwestern USA from 1984-2015. *For Ecol Manage* **433**: 709–19.

Steel ZL, Fogg A, Burnett R, *et al.* 2021. When bigger isn't better - implications of large high-severity wildfire patches for avian diversity and community composition. *Divers Distrib*.

Stephens SL, Battaglia MA, Churchill DJ, *et al.* 2021. Forest restoration and fuels reduction: Convergent or divergent? *Bioscience* **71**: 85–101.

Stephens SL, Iver JDM, Boerner REJ, *et al.* 2012. The effects of forest fuel-reduction treatments in the United States. *Bioscience* **62**: 549–60.

Stephens SL, Moghaddas JJ, Edminster C, *et al.* 2009. Fire treatment effects on vegetation structure, fuels, and potential fire severity in western U.S. forests. *Ecol Appl* **19**: 305–20.

Stephens SL, Westerling ALR, Hurteau MD, *et al.* 2020. Fire and climate change: conserving seasonally dry forests is still possible. *Front Ecol Environ* **18**: 354–60.

Stevens-Rumann CS, Kemp KB, Higuera PE, *et al.* 2018. Evidence for declining forest resilience to wildfires under climate change. *Ecol Lett* **21**: 243–52.

Stillman AN, Lorenz TJ, Fischer PC, *et al.* 2021. Juvenile survival of a burned forest specialist in response to variation in fire characteristics. *J Anim Ecol* **90**: 1317–27.

White AM, Tarbill GL, Wilkerson RL, and Siegel RB. 2019. Few detections of Black-backed Woodpeckers (Picoides arcticus) in extreme wildfires in the Sierra Nevada. *Avian Conserv Ecol* **14**: 17.

Young DJN, Werner CM, Welch KR, *et al.* 2019. Post-fire forest regeneration shows limited climate tracking and potential for drought-induced type conversion. *Ecology* **100**: e02571.