Studies and articles compiled by Sarah Hyden for March 2018 GSFFC meeting

—“Does increased forest protection correspond to higher fire severity in frequent-fire forests of the western United States?” Bradley, Hanson and DellaSala  2016

This large-scale study concludes that Western frequent-fire forests, including Southwestern forests, with the highest levels of protection from logging tend to burn least severely—logging defined to include the removal of trees, including small trees for non-commercial fuel reduction.

[onlinelibrary.wiley.com/doi/10.1002/ecs2.1492/full;jsessionid=46823985F7C07820C90590F976BABF83.f01t](http://onlinelibrary.wiley.com/doi/10.1002/ecs2.1492/full;jsessionid=46823985F7C07820C90590F976BABF83.f01t)…

—“Evaluating spatiotemporal tradeoffs under alternative fuel management and suppression policies: measuring returns on investment” USFS Thompson, Riley, Loeffler and Hass.  2016

Modeling results in this study confirmed that fire-fuel treatment encounters are rare, such that median fire suppression cost savings resulting from fuel treatments are zero. Sierra National Forest was used as study site to reflect a microcosm of many of the challenges surrounding contemporary fire and fuels management in the western U.S.

<https://www.firescience.gov/projects/13-1-03-12/project/13-1-03-12_final_report.pdf>

—“Fire Probability, Fuel Treatment Effectiveness and Ecological Tradeoffs in Western U.S. Public Forests"  Rhodes and Baker  2008

Study concludes there is a very low probability of a thinned site actually encountering a fire during the narrow window when tree density is lowest.

<https://benthamopen.com/contents/pdf/TOFSCIJ/TOFSCIJ-1-1.pdf>

—“Exploring Solutions to Reduce Risks of Catastrophic Wildfire and Improve Resilience of National Forests” Testimony of Dr. Dominick DellaSala, Chief Scientist, Geos Institute, Before the U.S. House of Representatives Natural Resources Committee, Subcommittee on Oversight and Investigations,September 27, 2017

Dr. DellaSala makes the case that proposals calling for increased logging and other forest fuel treatments and decreased environmental review in response to wildfires and insect outbreaks are not science driven, in many cases may make problems worse, and will not stem rising wildfire suppression costs.

[forestlegacies.org/images/projects/fire-testimony-housesubcommittee-20170927.pdf](http://forestlegacies.org/images/projects/fire-testimony-housesubcommittee-20170927.pdf)

—“Are High-Severity Fires Burning at a Much Higher Rates Recently Than Historically in Dry-Forest Landscapes?”  William Baker  2015

Dry forests at low elevations in temperate-zone mountains are commonly hypothesized to be at risk of exceptional rates of severe fire from climatic change and land-use. Increased fire could also be hypothesized as restorative of historical fire.

[journals.plos.org/plosone/article?id=10.1371/journal.pone.0136147](http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0136147)

—“Examining Historical And Current Mixed-Severity Fire Regimes in Ponderosa Pine and Mixed Conifer Forests”  Odion, Hanson, Arsenault, Baker, DellaSala, Hutto and Klenner  2004

Study results illustrate broad evidence of mixed-severity fire regimes in ponderosa pine and mixed-conifer forests of western North America. Prior to settlement and fire exclusion, these forests historically exhibited much greater structural and successional diversity than implied by the low/moderate-severity model.

 [Examining Historical and Current Mixed-Severity Fire Regimes in Ponderosa Pine and Mixed-Conifer For…](http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0087852)

—“Areas of Agreement and Disagreement Regarding Ponderosa Pine and Mixed Conifer Forest Fire Regimes: A Dialogue with Stevens et al.”  Odion, Hanson, Baker, DellaSala, Williams  2016

Discussion of studies that concludes with strong support of the historical importance of high-severity fire in ponderosa pine and mixed-conifer conifer forest fire regimes in forests of the western U.S.

[Areas of Agreement and Disagreement Regarding Ponderosa Pine and Mixed Conifer Forest Fire Regimes: …](http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0154579)

—“Tested by Fire: What Happens When Wildfires Meet Fuel Treatments?” Omi and Martinson  2007

Study finds fuel treatments in mixed-conifer forests can be somewhat effective for up to ten years, but effectiveness does not extend significantly beyond treated area, supporting Jack Cohen’s research conclusions that thinning is mostly useful in a limited radius around structures and values. Thinning without slash treatment is likely not effective and increases wildfire severity substantially outside boundaries of treated areas.

<https://www.firescience.gov/projects/briefs/03-2-1-07_FSBrief1.pdf>

—“Revisiting Fire History Studies”  George Wuerthner  2013

Describes methodological flaws that can occur in fire scar studies and contribute to a shorter fire rotation bias.

[Revisiting Fire History Studies – New West](https://newwest.net/2013/07/16/revisiting-fire-history-studies/)

—“Preventing Disaster: Home Ignitability in the Wildland-Urban Interface”  USFS Jack D. Cohen  2000

WUI fire loss problem can be defined as a home ignitability issue largely independent of wildland fuel management issues. The home and its surrounding 40 meters determine home ignitability. Also, it is important to not intermix the purposes of protection of structures and values with forest restoration.

[https://www.fs.fed.us/rm/pubs\_other/rmrs\_2000\_cohen\_j002.pd](https://www.fs.fed.us/rm/pubs_other/rmrs_2000_cohen_j002.pdf)

—“It Takes A Microclimate to Raise A Pinyon Tree”  Colorado State University  2017

Researchers identify factors that determine the potential for pinon pine populations to recover after a drought including tree canopy cover providing shaded microsite conditions.

[It Takes a Microclimate to Raise a Pinyon Tree - Science Newsline](http://www.sciencenewsline.com/news/2017110815200014.html)

—“Area burned in western United States is unaffected by recent mountain pine beetle outbreaks”  Hart, Schoennagel, Veblen and Chapman  2015

Study results demonstrate that the annual area burned in the western United States has not increased in direct response to bark beetle activity, bringing into question whether dead trees in general increase fire hazard.

[Area burned in the western United States is unaffected by recent mountain pine beetle outbreaks | Pr…](http://www.pnas.org/content/112/14/4375)

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—“Your Home Can Survive a Wildfire” USFS Jack Cohen

Great video for WUI residents on what it takes to really fire proof their homes and surroundings, including removing fine fuels yearly.

[(2) Your Home Can Survive a Wildfire - YouTube](https://www.youtube.com/watch?v=vL_syp1ZScM)

40 CFR definition of “cumulative impact”.

The USFS can take into account all Fireshed projects in the context of an EIS by considering cumulative impacts, even projects on other agency’s lands and on private lands.

40 CFR Sec. 1508.7 Cumulative impact.

"Cumulative impact" is the impact on the environment which

results from the incremental impact of the action when added

to other past, present, and reasonably foreseeable future

actions regardless of what agency (Federal or non-Federal) or

person undertakes such other actions. Cumulative impacts can

result from individually minor but collectively significant

actions taking place over a period of time.