Brandon M. Collins

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OVERVIEW

Outreach and service

Notable national efforts include serving on the Board of Directors for the Association for Fire Ecology for six years and being an Associate Editor for the Journal of Forestry for the last six years.

Regional efforts include: 1) serving on several teams tasked to develop forest management guidelines for reforestation, fire, forest restoration, and California Spotted Owl conservation goals; 2) providing scientific consultation to individual National Forests for project planning; and 3) planning and moderating two regional conferences that brought scientists and land managers together to address forest restoration issues.

Conference, workshop, symposia, and field tour presentations: 38 invited and 5 contributed presentations (last 3 years). This includes three invited testimonies to the California State Legislature.

National and local media interviews: 39 to newspaper, internet, radio, and television outlets (last 3 years).

Performed peer-review for various ecology, forestry, and fire science journals: 26 completed, 52 declined (last 3 years).

I taught or was a guest-lecturer for multiple years in five different university courses. Additionally, I served on academic committees for five PhD or M. S. students and mentored seven others through their research.

Generated research funding

In collaboration with several different university and agency partners I obtained $7.3 million ($1.8MM as Principal Investigator [PI], $5.5MM as co-PI).

Published peer-reviewed articles

As lead or contributing author, I have written 84 peer-reviewed journal articles and 10 peer-reviewed book chapters or agency-published reports. According to Google Scholar collectively these articles have been cited over 4200 times and my personal h-index is 37; Scopus: over 2600 total citations, h-index 30.

EDUCATION

Ph.D. Environmental Science, Policy, and Management, *University of California, Berkeley*, 2007

M.S. Forest Sciences, *Colorado State University*, 2004

B.S. Forestry, *University of California, Berkeley*, 2001

ACADEMIC/RESEARCH POSITIONS

Research Scientist: 16-Sep-2013 to present
University of California, Berkeley, Center for Fire Research and Outreach (in collaboration with USDA Forest Service, Pacific Southwest Research Station)
Supervisor: Scott Stephens, Professor and Director of Center for Fire Research and Outreach, sstephens@berkeley.edu, (510) 642-7304, may be contacted.

Responsibilities:

- Conduct original research: obtain external research funding (see Research Funding section for funded projects), design and implement research projects (preparing study plans, supervising field data collection), lead spatial and statistical analyses, publish peer-reviewed research articles (see Publications section)
- Convey research results to land managers, scientists, and interested public: serve on committees to integrate scientific findings and make recommendations to natural resource managers (see Service section), present research at conferences, workshops, field tours, and symposia (see Presentations section)
- Teach university courses and advise graduate students (see Teaching/Academic Advising section)

Relevant research projects I am leading or led design, spatial/statistical analysis, and write-up:

- Vegetation change in a northern Sierra Nevada landscape from 1941 to present
  This project uses historical and contemporary aerial photos to describe the distribution of vegetation types and structures in the 1941 landscape and compare that to the contemporary landscape. This project will quantify patch sizes of the different vegetation types/structures (e.g., shrub-dominated, open canopy forest, dense canopy forest). It will also explore the extent to which topography and soil type control the vegetation patterns observed in 1941. The intent is to provide guidance to restoration efforts aimed at creating vegetation conditions consistent with those existing under a more intact fire regime. These conditions are often assumed to reflect more resilient landscapes that can withstand external stressors, namely fire and changing climate.
- Effects of fuels management on fire severity in the 2013 Rim Fire Landscape
  The 255,000 acre 2013 Rim Fire in the Sierra Nevada created a unique opportunity to study fuels treatment effects across a large landscape. This project analyzes the impact of a suite of completed fuel treatments on satellite-derived estimates of fire severity. Additionally, it takes advantage of a valuable dataset consisting of over 170 field plots that were measured 2-6 weeks prior to burning in the Rim Fire, and then re-measured the year after the fire. These plot measurements allow for explicit characterization of change in vegetation structure and composition associated with different levels of satellite-derived estimates of fire severity. This study seeks to provide critical information on mitigating effects of large wildfires that will compliment much of the previous work which has been based primarily on fire modeling. This information will be particularly valuable for informing the design of

future fuels treatment projects, which are being called for at greater pace and scale in dry forest types throughout the western United States.

- Forest resilience following fuel reduction and restoration treatments
  This study examines longer-term impacts of replicated fuel reduction and restoration treatments by focusing on overstory tree growth responses, measured 7-15 years after treatment. We use these tree growth responses to estimate forest health and potential resilience to future stressors and disturbance. Given that overstory trees largely dictate the function of forests and services they provide (e.g., wildlife habitat, carbon sequestration, soil stability) these results have implications for understanding longer-term impacts of common restoration treatments.
- Using historical inventory data to examine controls on forest structure and composition
  This study analyzed historical timber inventory data collected systematically across two large landscapes to gain insight into the interaction between disturbances, vegetation structure, topography, and moisture availability prior to 20th century land management practices. The timber survey data were collected in 1911 from the Stanislaus and Sequoia National Forests. In both landscapes historical forest structure was very open, but highly variable. In many areas, historical tree densities and basal areas were lower than current restoration targets for the Sierra Nevada. Elevation and moisture availability were important drivers of forest structure, with lower basal area occurring in both lower elevations and in areas with lower available moisture.

Research Forester GS-0460-12 (Term): 26-Apr-2009 to 15-Sep-2013
USDA Forest Service, Pacific Southwest Research Station
Supervisor, Peter Stine, Director of Partnerships and Collaboration and Program Manager, retired

Responsibilities:

- Conducted original research: obtained external research funding (see Research Funding section for successfully funded projects), designed and implemented research projects (preparing study plans, supervising field data collection), led spatial and statistical analyses, published peer-reviewed research articles (see Publications section)
- Conveyed research results to land managers, scientists, and interested public: served on committees to integrate scientific findings and make recommendations to natural resource managers (see Service section), organized and moderated science and management conferences (see Service section), presented research at conferences, workshops, field tours, and symposia (see Presentations section).
- Supervised research staff: hired and supervised staff that contributed in research project implementation, data organization, analysis, and writing.

Relevant research projects that I led design, spatial/statistical analysis, and write-up:

- Modeling hazardous fire behavior across a fuels treated landscape
  This project modeled landscape-level fire behavior with and without a landscape treatment network and projected changes in fire behavior over several decades to assess fuel treatment network longevity. Additionally this project assessed fuel treatment effectiveness and longevity over a range of two critical fire modeling inputs: surface fuel models and canopy base height. Results demonstrated a coordinated fuel treatment network that incorporates local knowledge of fire weather and likely fire behavior patterns can have a substantial impact on reducing hazardous fire potential. However, even with planned maintenance of the

treatment network hazard grows in untreated areas over time, suggesting additional treatments, including fire use, would be necessary to maintain low hazardous fire potential.

- Trends in fire weather and large fire potential
  In this study 40 years of daily fire weather observations from five weather stations across the northern Sierra Nevada were analyzed to investigate potential changes or trends in the frequency of high- to extreme-fire weather. The analysis demonstrated fairly strong upward trends in the occurrence of high- to extreme-fire weather, particularly since the mid-1990s. This increased occurrence of high fire weather conditions suggests that there is more opportunity for fires to grow rapidly and overwhelm initial suppression efforts, likely resulting greater incidence of large fires throughout the region. This is particularly problematic in the northern Sierra Nevada, where there is a complex arrangement of land ownerships, including numerous human communities.
- Early forest dynamics following stand-replacing fire
  This study quantified shrub characteristics and tree regeneration patterns in stand-replacing patches for five fires in the northern Sierra Nevada. These fires occurred between 1999 and 2008, and field measurements were conducted in 2010. Tree regeneration patterns were analyzed at two spatial scales: patch level, in which field observations and spatial data were aggregated for a given stand-replacing patch, and plot level. Patch characteristics (size, perimeter : area, distance-to-edge) appeared to have little effect on observed tree regeneration patterns. Conifer regeneration was higher in areas with post-fire management activities (salvage harvesting, planting). These results indicate that the natural return of pine/mixed-conifer forests is uncertain in many areas affected by stand-replacing fire.

Post-doctoral Researcher: 25-May-2007 to 25-Apr-2009
University of California, Berkeley, Dept. of Environmental Science, Policy, and Management
Supervisor: Scott Stephens, Professor and Director of Center for Fire Research and Outreach, sstephens@berkeley.edu, (510) 642-7304, may be contacted.

Responsibilities:
Served as lead analyst, lead author, and supervised field data collection for a research project aimed at simulating vegetation change and modeling fire behavior for landscapes treated using strategically placed area treatments. This included using fire behavior modeling inputs derived from LiDAR data. These LiDAR inputs were developed using extensive field plots for validation and calibration.

Graduate Student Researcher: 20-May-04 to 24-May-2007
University of California, Berkeley, Dept. of Environmental Science, Policy, and Management
Supervisor: Scott Stephens, Professor and Director of Center for Fire Research and Outreach, sstephens@berkeley.edu, (510) 642-7304, may be contacted.

Responsibilities:
Served as lead analyst, lead author, and supervised field crews collecting data for a research project that investigated ecological effects of a long-term fire use program in two Sierra Nevada wilderness areas. This included analyzing interactions between successive fires in which mapped fire perimeters and satellite-derived estimates of fire effects were used to evaluate how fuels, weather, and topography influenced interactions among fires. Additionally, I led collection and analysis of fire scars and tree increment cores to develop a dendrochronology-based fire history for both wilderness areas.

RESEARCH FUNDING (PI, Co-PI: Collins was principal, collaborating investigator)

Project title	**Year funded**	**Funding organization**	**Funding**
Fuelbreak systems: contrasting metrics and evaluative criteria for northern and southern California (co-PI)	2020	USDA-USDI Joint Fire Sciences Program	$360,759
Comprehensive open source development of next generation wildfire models for grid resiliency (co-PI)	2019	California Energy Commission - Electric Program Investment Charge	$497,493
The carbon consequences of catchment-scale prescribed burning (co-PI)	2019	CAL FIRE Forest Health Grant Program – Research Grants	$380,000
Keeping fire on the landscape: Consequences for carbon balance and forest resilience (co-PI)	2019	CALFIRE Forest Health Grant Program – Research Grants	$454,772
Managing mid- and late seral forest stands for forest resilience (PI)	2017	USFS Plumas National Forest: Moonlight Fire Restoration	$150,000
Stand-level impacts of forest restoration treatments in riparian and adjacent upland areas (PI)	2017	USFS Pacific Southwest Research Station	$30,000
Lake Tahoe West Landscape Forest Restoration Partnership, fine-scale fire behavior and long-term forest health (PI)	2017	USFS Pacific Southwest Research Station	$160,000
Understanding and improving California wildfire emission estimates (PI)	2017	California Air Resources Board (2 separate awards)	$160,000
Post-fire restoration to avert novel conditions in Sierra Nevada forests (co-PI)	2016	USDA-USDI Joint Fire Sciences Program	$399,000
Effects of post-fire management on vegetation and fuels following successive wildfires in mixed conifer forests (co-PI)	2016	USDA-USDI Joint Fire Sciences Program	$280,000
Innovations in measuring and managing forest carbon stocks in California (co-PI)	2016	Berkeley Energy and Climate Institute: California's Fourth Climate Change Assessment	$500,000

Post-fire management options for forest recovery and fire resilience (PI)	2015	USFS Plumas National Forest: Moonlight Fire Restoration	$220,000
Changes in forest vegetation and fuel conditions 15 years after prescribed fire (co-PI)	2015	USDA-USDI Joint Fire Sciences Program	$386,000
Informing landscape-scale forest restoration using site specific historical reference conditions (PI)	2014	USFS Plumas National Forest: Moonlight Fire Restoration	$103,000
Hydrology and Fire in the Sierra Nevada: A Possible Win-Win (co-PI)	2014	USDA-USDI Joint Fire Sciences Program	$395,000
Effects of fuels management on fire intensity, rate of spread, severity, and resultant forest structure within the 2013 Rim Fire landscape (PI)	2014	USDA-USDI Joint Fire Sciences Program	$380,000
Treatment tradeoffs in the Lake Tahoe Basin: considering wildfire hazard, wildlife habitat, and smoke impacts (co-PI)	2013	USFS-PSW Internal Competitive Research Emphasis Areas Program	$70,000
Re-measurement and analysis of 1911 forest inventory data from the central Sierra Nevada at large spatial scales: Informing National Forest Plan revisions (co-PI)	2012	University of California, Agriculture and Natural Resources competitive grant program	$40,000
A century of forest landscape change in the central Sierra Nevada: impacts of fire exclusion and past management practices (PI)	2012	USFS-PSW Internal Competitive Research Emphasis Areas Program	$65,000
Life cycle pathways and impact analysis of wildfire fuel reduction treatments (co-PI)	2012	California Energy Commission	$360,000
Variable thinning using historical stand structure data to create fire-resilient forests and enhance ecosystem services in a changing climate (co-PI)	2012	USDA-Agriculture and Food Research Initiative Competitive Grant	$495,000

Surface fuel variability and sensitivity of modeled fire behavior within completed fuel treatments (PI)	2012	USFS Herger Feinstein Quincy Library Group monitoring program	$145,000
Severe fire weather and future fire activity in the northern Sierra Nevada (PI)	2011	USFS-PSW Internal Competitive Climate Change Program	$44,000
California forest and rangeland greenhouse gas inventory development (co-PI)	2011	California Air Resources Board	$400,000
Assessment of fire hazard/risk in the wildland-urban interface and stream environment zones (co-PI)	2011	BLM Southern Nevada Public Lands Management Act	$150,000
Effectiveness of a landscape fuel treatment network at reducing hazardous fire potential (PI)	2011	USFS Herger Feinstein Quincy Library Group monitoring program	$170,000
Fuel treatments effects on carbon budgets of Sierra Nevada mixed conifer forests in California (co-PI)	2010	USDA-USDI Joint Fire Sciences Program	$190,000
Fire mitigation and fire effects in northern Sierra Nevada/southern Cascades forested landscapes (PI)	2010	USFS Plumas National Forest: Storrie Fire Restoration	$215,000
TOTAL		$7.2 million ($1.8MM PI, $5.4MM co-PI)	

SERVICE

National

2014 – present, Associate Editor, Journal of Forestry.
Duties: Manage manuscript submissions related to fire management and fire ecology. I have managed 16 manuscripts to date.

2012 – present, Education Committee Member, Association for Fire Ecology (AFE).
Duties: Develop criteria for certification of undergraduate programs in fire ecology and management by AFE. Evaluate institutions applying for certifications and make recommendations to Board of Directors.

2011 – 2017, Board of Directors Member: Association for Fire Ecology.
Duties: Vote on resolutions directing AFE activities including: conferences, oversight for the journal Fire Ecology, professional certification for fire ecologists, and other outreach. Participate in planning and implementing AFE activities.

2014, External Reviewer, Joint Fire Sciences Program (JFSP).

Duties: Participate on panel of researchers and federal land managers that evaluated Graduate Research Innovation Award proposals based on a performance criteria issued by JFSP.

2014, Invited Workshop Participant, Coupled Human and Natural Systems, Oregon State University, Bend, OR.
Duties: Contribute expertise on fire behavior and fuel treatment effectiveness towards the collective goal synthesizing current social and ecological science for management of fire-prone forests.

2013, External Reviewer, Joint Fire Sciences Program (JFSP).
Duties: Participate on panel of researchers and federal land managers that evaluated research proposals based on a funding opportunity notice issued by JFSP.

2011, External Reviewer for Scientist Promotion, Smithsonian Conservation Biology Institute.
Duties: Evaluate research and service accomplishments of a research scientist and provide recommendations for promotion and future development.

Regional

2017 – 2018, Invited Member, Resource Conservation and Stocking Standards Review Team
Duties: Develop recommendations to the California Board of Forestry on minimum stocking standard for forested land that explicitly incorporates considerations on forest resilience given future projections for disturbance and climate.

2017 – 2018, Invited Member, California Spotted Owl Conservation Strategy Team
Duties: Identify forest management goals that balance habitat requirements with forest vulnerability to wildfire and ecosystem stressors (drought, insects, disease).

2017, Invited Member, Sierra Business Council Legislator Forum
Duties: Discuss issues related to forest management and wildfire in the Sierra Nevada with California legislators and staffers.

2017, Invited Reviewer, California Forest Carbon Plan
Duties: Perform Science consistency review.

2014 – 2017, Science Consultant, USFS Region 5.
Duties: Assist Forest Plan Revision by helping define desired future conditions for Sierra Nevada forests in terms of stand- and landscape scale forest structure and fire effects.

2015 – 2016, Invited Member, California Spotted Owl Interim Forest Management Guidelines, USFS.
Duties: Develop guidelines for forest management activities in Region 5 that meet both conservation and forest restoration objectives.

2014 – 2016, Invited Member, California Spotted owl (CSO) Assessment Team.
Duties: Develop a cross-discipline assessment of current and projected CSO status, which includes population and habitat trends.

2013, External Reviewer, Lake Tahoe Basin Management Unit Management Plan.
Duties: Provide science consistency review.

2013, Science Consultant, Chips Fire Salvage and Restoration Project, Plumas NF.

Duties: Provide interpretation of scientific findings to help identify desired forest structure and fuel conditions.

2012 – 2013, Core Team Member, Sierra Nevada Science Synthesis Team.
Duties: Develop a cross-discipline report synthesizing the current state of science focusing on key forest management issues in the Sierra Nevada. This report is intended to guide the new round of Land and Resource Management Plans for the 11.5 million acres of National Forests in the Sierra Nevada Plan Area.

2011, Science Consultant, Keddie Ridge Hazardous Fuels Reduction Project, Plumas NF.
Duties: Provide scientific expertise for large-scale fuel treatment and restoration project in the northern Sierra Nevada.

2011, Invited Panelist, Fire Management Scenario Planning Workshop, Fresno, Ca.
Duties: Assist southern Sierra Nevada resource managers (NPS, USFS) in determining effects of future climate change projections on focal resources.

2011, Planning Committee Member and Moderator, Conference: Building on Science to Implement Landscape Level Treatments for Fire Resilience, Sacramento, Ca.
Duties: Develop agenda for a 2 day conference. Contact scientists and coordinate presentation topics. Introduce speakers and lead discussions with audience in smaller, break-out groups.

2010, Planning Committee Member and Moderator, Conference: Pre- and Post-Wildfire Forest Management for Ecological Restoration and Fire Resiliency, Sacramento, Ca.
Duties: Develop agenda for a 2.5 day conference. Contact scientists and coordinate presentation topics. Introduce speakers for multiple conference sessions and lead interactive discussion with invited science panel and a 300 member audience.

TEACHING/ACADEMIC ADVISING EXPERIENCE

Teaching

2015 – present, Instructor, University of California, Berkeley; ESPM 134 Fire, Insects, and Disease in Forest Ecosystems

2014 – present, Instructor, University of California, Berkeley; ESPM 105C Silviculture and Utilization, Forestry Summer Field Program.

2015, Guest lecturer, University of California, Berkeley; ESPM 72 Introduction to GIS for Natural Resources.

2011 – present, Guest lecturer, University of California, Davis; course titles: ESM 141 Fire Ecology, ECL 290 Forest Management Seminar

2009 – present, Guest lecturer, University of California, Berkeley; course title: Graduate Fire Science Seminar, ESPM 265

2006 – 2008, Junior Varsity and Varsity High School Assistant Football Coach, Encinal High School, Alameda, California

2005 – 2006, Teaching Assistant, Department of Environmental Science, Policy, and Management, University of California, Berkeley; course title: Wildland Fire Science, ESPM 181

2003, Guest lecturer, Department of Forest, Rangeland, and Watershed Stewardship, Colorado State University; course title: Forest Fire Management, F424

2001, Teaching Assistant, Forestry Summer Field Program, University of California, Berkeley; course titles (5): Sierra Nevada Ecology, Silviculture, Forest Measurements; Timber Resource Utilization, Forest Resource Management, ESPM 101A-101E

Advising

2019, Thesis Mentor, Clark University: one master's student

2015 – present, Thesis Mentor, University of California, Berkeley: seven master's and five PhD students

2014 – present, Oral Qualifying Exam Committee member, University of California, Berkeley: three master's and two PhD students

QUALIFICATIONS

2010 – 2016, Firefighter 2 and Ecologist, Incident Qualification and Certification System, Pacific Southwest Region, Fire and Aviation Management (red card).

PRESENTATIONS

Invited

2019, Feather River Stewardship Coalition, Quincy, CA

2019, Richmond Soroptimist Club, Guest Speaker Series, El Sobrante, CA

2019, The Energy and Resources Group Fall 2019 Colloquium Series, Berkeley, CA

2019, Association for Studies of Literature and the Environment, "Paradise on Fire", Davis, CA

2019, California Extreme Precipitation Symposium, The Impacts of Global Warming on California: A 30-Year Retrospective and Future Projections, Davis, CA

2019, Expert briefing, California Council on Science and Technology: Wildfire Forest Management, State Capitol building, Sacramento, CA

2019, Sierra Nevada Conservancy Rim Fire Forest Resilience Tour, Tuolumne County, CA

2019, Eastern Sierra Forest Restoration Workshop, Pacific Southwest Region Ecology Program and US Forest Service Inyo National Forest, Mammoth Lakes, CA

2019, UC Berkeley Fire Research Workshop, Fire in the Environment, Berkeley, CA

2019, UC Berkeley, Environmental Science, Policy, and Management Departmental Seminar, Berkeley, CA

2019, Fire MOU partnership meeting: Pyrosilviculture, Pyrodiversity, and Building Capacity for Expanded Ecological Burning in California, McClellan, CA

2019, South Fork American River Cohesive Strategy, Collaborative meeting: Variability in forests adapted to frequent fire, Placerville CA

2019, The Wildlife Society, Western Section, Annual meeting: Fire ecology and forest health symposium, Yosemite National Park, CA

2019, The V-town Salon and Speaker Series: Rethinking our current management practices in California's forests, Vallejo, CA

2018, Multi Aged Forestry Group Workshop: Pyrosilviculture, Fire use as a silvicultural tool in the recovery and management of central Sierra Forestlands, Shaver Lake, CA

2018, The Central Sierra Historical Society: Fire in the Sierra, learn from the past to create a better future, Shaver Lake, CA

2018, Society of American Foresters National Convention, 193 Million Acres Panel Discussion, Portland, OR

2018, Lake Tahoe West Restoration Partnership, Stakeholder Science Committee Meeting (Webinar)

2018, UCB Science and Policy Group, Berkeley, CA

2018, Lair of the Golden Bear, Pinecrest, CA

2018, UC Division of Agriculture and Natural Resources Statewide Conference, Fire special session (Webinar)

2018, California Licensed Forester Association Annual Meeting: Stocking Standards: Past, Present, & Future; Anderson, CA

2018, Schatz Seminar Series, Humboldt State University, Arcata, CA

2017, National Advanced Silviculture Program, USFS Region 5 & 6, Oroville, CA.

2017, The Wildlife Society Annual Meeting, organized symposium: Wildfire and Spotted Owls: It's a Burning Issue; Albuquerque, NM

2017, Plumas National Forest Leadership Team, Quincy, CA

2017, Pacific Forest Trust, Klamath-Cascade Advisory Council Meeting, Redding, CA

2017 California Board of Forestry and Fire Protection Meeting, Blodgett Forest, Georgetown, CA (field)

2017, National Cohesive Wildland Fire Management Strategy Workshop, Reno, NV

2017, Testimony, Joint Hearing, California State Assembly Natural Resources Committee and Senate Natural Resources and Water Committee, Sacramento, CA

2017, Berkeley Breakfast Club, Berkeley, CA

2017, National Wildfire Coordination Group Training Course RX 310, McClellan, CA

2016, Silviculture Workshop, Applying Disturbance Regime and Multiaged Concepts to California Forestry, Georgetown, CA

2016, Nature Conservancy and BLM, Tree Spatial Patterns and Multi-aged Forest Workshop, Bend, OR (2 different presentations)

2016, Alpine Biomass Committee, Markleeville, CA

2016, California Academy of Sciences – Night Life, San Francisco, CA

2016, Sierra Business Council-Sierra Climate Adaptation Mitigation Partnership (webinar)

2016, California Governor's Tree Mortality Workshop, Sacramento CA

2016, Testimony, Joint Hearing, California State Assembly Natural Resources Committee and Assembly Budget Subcommittee on Resources and Transportation, Sacramento, CA

2016, Dinkey Collaborative Monitoring and Science Symposium, Clovis, CA

2016, Sequoia and Kings Canyon National Park Resources Staff, Three Rivers, CA

2015, National Advanced Silviculture Program, USFS Region 5 & 6, Georgetown, CA

2015, California Fire Science Delivery Consortium and the Nature Conservancy's LANDFIRE Program (webinar)

2015, California Licensed Forester Association Fall Workshop: Fire on the Mountain, Blodgett Forest, Georgetown, CA (field)

2015, Tahoe Science Conference, Reno, NV.

2015 California Cooperative Group for Expansion of Fire Use: A role for fire: Realizing sustainable carbon in CA's forests, Placerville, CA (field)

2015, Joint Fire Sciences Program Governing Board – Rim Fire Field Tour, California Fire Science Delivery Consortium, Groveland, CA (field)

2015, Pacific Southwest Research Station, Conservation Biological Diversity Program's Fire and Forest Restoration Workshop, Blodgett Forest, Georgetown, CA (field)

2015, Western Snow Conference – 83rd Annual Meeting, Grass Valley, CA

2015, University of Nevada, Reno, Geography Department Colloquium, Reno, NV

2014, Society of American Foresters, Northern and Southern California Chapters' Summer Meeting: Economic and Environmental Impacts of Large Wildfires, Groveland, CA (field)

2014, University of California, Association of Natural Resources Extension Professionals Annual Meeting, Sacramento, CA

2014, California fire science consortium – Blodgett Forest, Georgetown, CA (field)

2014, University of California Cooperative Extension Meeting, Reducing Wildfire Risks to Outdoor Camps Workshop, Groveland, CA.

2014, Dinkey Collaborative Forest Landscape Restoration Project, Clovis, CA.

2014, California Forestry Association Annual Meeting, Napa, CA.

Contributed

2019, US-International Association for Landscape Ecology Annual Meeting "Conservation Innovation", Ft. Collins, CO

2017, Association for Fire Ecology 7th International Fire Ecology and Management Congress, Special Session: Bark Beetle and Fire Interactions in Western US Forests, Orlando, FL

2017, Ecological Society of America, 102nd annual meeting, Linking biodiversity, material cycling and ecosystem services in a changing world, Portland, OR

2016, Natural Areas Conference, 43rd annual meeting, Climate Change Adaptation and Natural Areas Management: Turning Words to Action, Davis, CA (2 presentations)

2015, Association for Fire Ecology 6th International Fire Ecology and Management Congress, Advancing Ecology in Fire Management, San Antonio, TX.

2014, National Wilderness Conference, 50 Years of American Wilderness, Albuquerque, NM.

2014, Association for Fire Ecology, Large Wildland Fires: Social, Political, and Ecological Effects, Missoula, MT.

2014, Sierra Nevada Adaptive Management Project, Fire and Forest Health Integration Team meeting, McClellan, CA.

2014, Yosemite Hydro-Climate and Fire Symposium, Yosemite Village, CA.

2006-2013, 16 invited and 14 contributed for regional and national meetings.

JOURNAL MANUSCRIPT REVIEW (last 3 years 26 completed, 52 declined)

Agricultural and Forest Meteorology
Applied Vegetation Science
Canadian Journal of Forest Research
Ecosphere
Ecography
Ecosystems
Ecological Applications
Ecological Monographs
Environmental Management
Fire Ecology
Forests
Forest Ecology and Management
Forest Science
International Journal of Wildland Fire
Journal of Biogeography
Journal of Environmental Management
Journal of Geophysical Research
Journal of Forestry
Landscape Ecology
Natural Areas Journal

PUBLICATIONS (oldest to newest):

Peer-reviewed scientific journal articles (21 first author; 22 second author)

1. Stephens, S. L., and **B. M. Collins**. 2004. Fire regimes of mixed conifer forests in the north-central Sierra Nevada at multiple spatial scales. Northwest Science 78: 12-23.
2. **Collins, B. M.**, P. N. Omi, and P. L. Chapman. 2006. Regional relationships between climate and wildfire burned area in the Interior West, U.S.A. Canadian Journal of Forest Research 36: 699-709.
3. **Collins, B. M.**, M. Kelly, J. W. van Wagtendonk, and S. L. Stephens. 2007. Spatial patterns of large natural fires in Sierra Nevada wilderness areas. Landscape Ecology 22: 545-557.
4. **Collins, B. M.**, J. J. Moghaddas, and S. L. Stephens 2007. Initial changes in forest structure and understory plant community following fuel reduction activities in a Sierra Nevada mixed conifer forest. Forest Ecology and Management 239: 102-111.
5. Stephens, S. L., D. L. Fry, E. Franco-Vizcaino, **B. M. Collins**, and J. J. Moghaddas. 2007. Coarse woody debris and canopy cover in an old-growth Jeffrey pine-mixed conifer forest from the Sierra San Pedro Martir, Mexico. Forest Ecology and Management 240: 87-95.
6. **Collins, B. M.**, and S. L. Stephens. 2007. Managing natural fire in Sierra Nevada wilderness areas. Frontiers in Ecology and the Environment 5: 523-527.

7. **Collins, B. M.**, and S. L. Stephens. 2007. Fire scarring patterns in Sierra Nevada wilderness areas burned by multiple wildland fire use fires. Fire Ecology 3: 53-67.
8. **Collins, B. M**., J. D. Miller, A. E. Thode, M Kelly, J. W. van Wagtendonk, and S. L. Stephens. 2009. Natural wildfires become self-limiting in Sierra Nevada mixed conifer forests. Ecosystems 12: 114-128.
9. North, M., K. Van de Water, S. L. Stephens, and **B. M. Collins**. 2009. Climate, rain shadow, and human-use influences on Eastern Sierra Nevada fire regimes. Fire Ecology 5: 20-34.
10. **Collins, B. M.**, S. L. Stephens, J. J. Moghaddas, and J. Battles. 2010. Challenges and approaches in planning fuel treatments across fire-excluded forested landscapes. Journal of Forestry 108: 24-31.
11. **Collins, B. M**., and S. L. Stephens. 2010. Stand-replacing patches within a 'mixed severity' fire regime: quantitative characterization using recent fires in a long-established natural fire area. Landscape Ecology 25: 927-939.
12. Stephens S. L., D. L. Fry, **B. M. Collins**, C. N. Skinner, E. Franco-Vizcaino, and T. J. Freed. 2010. Fire-scar formation in mixed conifer forests in the Sierra San Pedro Mártir, Mexico. Canadian Journal of Forest Research 40: 1497-1505.
13. Moghaddas, J. J., **B. M. Collins**, K. Menning, E. E. Y. Moghaddas, and S. L. Stephens. 2010. Fuel treatment effects on modeled landscape level fire behavior in the northern Sierra Nevada. Canadian Journal of Forest Research 40: 1751-1765.
14. Stephens, S. L., C. I. Millar, and **B. M. Collins**. 2010. Operational approaches to managing forests of the future in western North America within a context of changing climates. Environmental Research Letters 5: e024003.
15. **Collins, B. M.**, S. L. Stephens, G. B. Roller, J. Battles. 2011. Simulating fire and forest dynamics for a coordinated landscape fuel treatment project in the Sierra Nevada. Forest Science: 57: 77-88.
16. **Collins, B. M.**, R. G. Everett, and S. L. Stephens. 2011. Impacts of fire exclusion and recent managed fire on forest structure in old growth Sierra Nevada mixed-conifer forests. Ecosphere 2: e51.
17. Stephens, S. L., R. E. Boerner, J. J. Moghaddas, E. E. Y. Moghaddas, **B. M. Collins**, C. B. Dow, C. Ediminster, C. E. Fiedler, D. L. Fry, B. R. Hartsough, J. E. Keeley, E. E. Knapp, J. D. McIver, C. N. Skinner, and A. Youngblood. 2012. Fuel treatment impacts on estimated wildfire carbon loss from forests in Montana, Oregon, California, and Arizona. Ecosphere 3: e38.
18. Stephens, S. L., **B. M. Collins**, and G. B. Roller. 2012. Fuel treatment longevity in a Sierra Nevada mixed conifer forest. Forest Ecology and Management 285: 204-212.
19. Miller, J. D., **B. M. Collins**, J. A. Lutz, S. L. Stephens, J. W. van Wagtendonk, and D. A. Yasuda. 2012. Comparison of wildfires between different ecological regions and federal land management agencies in the Sierra Nevada, California, USA. Ecosphere 3: e80.
20. North, M., **B. M. Collins**, and S. L. Stephens. 2012. Using fire to increase the scale, benefits and future maintenance of fuels treatments. Journal of Forestry 110: 392-401.

21. Jakubowksi, M., Q. Guo, **B. M. Collins**, S. L. Stephens, and M. Kelly. 2013. Predicting surface fuel models and fuel metrics using lidar and CIR imagery in a dense mixed conifer forest. Photogrammetric Engineering and Remote Sensing 79: 37-49.
22. Lydersen, J. M., M. P. North, E. E. Knapp, and **B. M. Collins**. 2013. Quantifying spatial patterns of tree groups and gaps in mixed-conifer forests: reference conditions and long-term changes following fire suppression and logging. Forest Ecology and Management 304: 370-382.
23. **Collins, B. M.,** G. B. Roller. 2013. Early forest dynamics in stand-replacing fire patches in the northern Sierra Nevada, California, USA. Landscape Ecology 28: 1801-1813.
24. **Collins, B. M.**, H. A. Kramer, K. M. Menning, C. Dillingham, D. Saah, P. A. Stine, and S. L. Stephens. 2013. Modeling hazardous fire potential within a completed fuel treatment network in the northern Sierra Nevada. Forest Ecology and Management 310: 156-166.
25. **Collins, B. M.** 2014. Fire weather and large fire potential in the northern Sierra Nevada. Agricultural and Forest Meteorology 189-190: 30-35.
26. Fry, D. L., S. L. Stephens, **B. M. Collins**, M. P. North, E. Franco-Vizcaíno, and S. J. Gill. 2014. Contrasting spatial patterns in active-fire and fire-suppressed Mediterranean climate old-growth mixed conifer forests. PLoS One 9: e88985.
27. Lydersen, J. M., **B. M. Collins**, C. Ewell, A. L. Reiner, J. A. Fites, C. B. Dow, P. Gonzalez, D. S. Saah, and J. J. Battles. 2014. Using field data to assess model predictions of surface and ground fuel consumption by wildfire in coniferous forests of California. Journal of Geophysical Research: Biogeosciences 119: 223-235.
28. Lydersen, J. M., M. P. North, and **B. M. Collins**. 2014. Severity of an uncharacteristically large wildfire, the Rim Fire, in forests with relatively restored frequent fire regimes. Forest Ecology and Management 328: 326-334.
29. Kramer, H. A., **B. M. Collins**, S. L. Stephens, and M. Kelly. 2014. Quantifying ladder fuels: a new approach using LiDAR. Forests 5: 1432-1453.
30. Stephens, S. L., S. W. Bigelow, R. D. Burnett, **B. M. Collins**, C. V. Gallagher, J. Keane, D. A. Kelt, M. P. North, L. J. Roberts, P. A. Stine, and D. H. Van Vuren. 2014. California spotted owl, songbird, and small mammal responses to landscape-scale fuel treatments Bioscience 64: 893-906.
31. **Collins, B. M.**, A. J. Das, J. J. Battles, D. L. Fry, K. D. Krasnow, and S. L. Stephens. 2014. Beyond reducing fire hazard: fuel treatment impacts on overstory tree survival. Ecological Applications 24: 1879-1886.
32. North, M., A. Brough, J. W. Long, **B. M. Collins**, P. Bowden, D. A. Yasuda, J. D. Miller, and N. G. Sugihara. 2015. Constraints on mechanized treatment significantly limit mechanical fuels reduction extent in the Sierra Nevada. Journal of Forestry 113: 40-48.
33. Safford, H. D., J. D. Miller, and **B. M. Collins**. 2015. Differences in land ownership, fire management objectives, and source data matter: a reply to Hanson and Odion (2014). International Journal of Wildland Fire 24: 286-293.

34. Gonzalez, P., J. J. Battles, **B. M. Collins**, T. Robards, and D. S. Saah. 2015. Aboveground live carbon stock changes of California wildland ecosystems, 2001-2010. Forest Ecology and Management 348: 68-77.
35. Lydersen, J. M., **B. M. Collins**, E. E. Knapp, G. B. Roller, and S. L. Stephens. 2015. Relating fuel loads to overstorey structure and composition in a fire-excluded Sierra Nevada mixed conifer forest. International Journal of Wildland Fire 24: 484-494.
36. Stephens, S. L., J. M. Lydersen, **B. M. Collins**, D. L. Fry, and M. D. Meyer. 2015. Historical and current landscape-scale ponderosa pine and mixed conifer forest structure in the Southern Sierra Nevada. Ecosphere 6: e79.
37. Stephens, S. L., M. P. North, and **B. M. Collins**. 2015. Large wildfires in forests: what can be done? American Institute of Biological Sciences, Action Bioscience: http://www.actionbioscience.org/environment/large_wildfires_in_forests_what_can_be_done.html#learnmore.
38. **Collins, B. M.**, J. M. Lydersen, R. G. Everett, D. L. Fry, and S. L. Stephens. 2015. Novel characterization of landscape-level variability in historical vegetation structure. Ecological Applications 25: 1167-1174
39. Tempel, D. J., R. J. Gutierrez, J. J. Battles, D. L. Fry, Y. Su, Q. Guo, M. J. Reetz, S. A. Whitmore, G. M. Jones, **B. M. Collins**, S. L. Stephens, M. Kelly, W. J. Berigan, and M. Z. Peery. 2015. Evaluating short- and long-term impacts of fuels treatments and simulated wildfire on an old-forest species. Ecosphere 6: e261.
40. North, M. P., S. L. Stephens, **B. M. Collins**, J. K. Agee, G. Aplet, J. F. Franklin, and P. Z. Fule. 2015. Reform forest management to work with fire. Science 349: 1280-1281.
41. Dore, S., D. L. Fry, **B. M. Collins**, R. Vargas, R. A. York, and S. L. Stephens. 2016 Management impacts on carbon dynamics in a Sierra Nevada mixed conifer forest. PLoS One 11: e0150256.
42. Dow, C.B., **B. M. Collins**, and S. L. Stephens. 2016. Incorporating resource protection constraints in an analysis of landscape fuel treatment effectiveness in the northern Sierra Nevada, CA, USA. Environmental Management 57: 516-530.
43. Hessburg, P. F., T. A. Spies, D. A. Perry, C. N. Skinner, A. H. Taylor, P. M. Brown, S. L. Stephens, A. J. Larson, D. J. Churchill, N. A. Povak, P. H. Singleton, B. McComb, W. J. Zielinski, **B. M. Collins**, R. B. Salter, J. J. Keane, J. F. Franklin, and G. Riegel. 2016. Tamm Review: Management of mixed-severity fire regime forests in Oregon, Washington, and Northern California. Forest Ecology and Management 366: 221-250.
44. Su, Y., Q. Guo, D. L. Fry, **B. M Collins**, M. Kelly, J. P. Flanagan, and J. J. Battles. 2016. A vegetation mapping strategy for conifer forests by combining airborne lidar data and aerial imagery. Canadian Journal of Remote Sensing 42: 1-15.
45. Coppoletta, M., K. E. Merriam, and **B. M. Collins**. 2016. Post-fire vegetation and fuel development influences fire severity patterns in reburns. Ecological Applications 26: 686-699.
46. **Collins, B. M.**, J. D. Miller, and S. L. Stephens. 2016. Letter to the Editor. Natural Areas Journal 36: 234-238.

47. Stevens, J. T., **B. M. Collins**, J. Long, M. P. North, S. Prichard, L. W. Tarnay, and A. M. White. 2016. Evaluating potential trade-offs among fuel treatment strategies in mixed-conifer forests of the Sierra Nevada. Ecosphere 7: e01445.
48. **Collins, B. M.**, J. M. Lydersen, D. L. Fry, K. M. Wilkin, T. J. Moody, and S. L. Stephens. 2016. Variability in vegetation and surface fuels across mixed-conifer-dominated landscapes with over 40 years of natural fire. Forest Ecology and Management 381: 74-83.
49. Kramer, H. A., **B. M. Collins**, F. K. Lake, M. K. Jakubowksi, S. L. Stephens, and M. Kelly. 2016. Estimating ladder fuels: a new approach combining field photography with LiDAR. Remote Sensing 8: e766.
50. Su, Y., Q. Guo, **B. M. Collins**, D. L. Fry, T. Hu, and M. Kelly. 2016. Forest fuel treatment detection using multi-temporal airborne lidar data and high resolution aerial imagery: A case study in the Sierra Nevada Mountains, California. International Journal of Remote Sensing 37: 3222-3345.
51. Lydersen, J. M., **B. M. Collins**, J. D. Miller, D. L. Fry, and S. L. Stephens. 2016. Relating fire-caused change in forest structure to remotely sensed estimates of fire severity. Fire Ecology 12: 99-116.
52. Stephens, S. L., J. D. Miller, **B. M. Collins**, M. P. North, J. J. Keane, and S. L. Roberts. 2016. Wildfire impacts on California spotted owl nesting habitat in the Sierra Nevada. Ecosphere 7: e01478.
53. Stephens, S. L., **B. M. Collins**, E. Biber, and P. Z. Fulé. 2016. US federal fire and forest policy: emphasizing resilience in dry forests. Ecosphere 7: e01584.
54. Kramer, H. A., **B. M. Collins**, C. V. Gallagher, J. Keane, S. L. Stephens, and M. Kelly. 2016. Accessible LiDAR: estimating large tree density for habitat identification. Ecosphere 7: e01593.
55. Chiono, L. A., D. L. Fry, **B. M. Collins**, A. H. Chatfield, and S. L. Stephens. 2017. Landscape-scale fuel treatment and wildfire impacts on carbon stocks and fire hazard in California spotted owl habitat. Ecosphere 8: e01648.
56. Boisramé, G. F. S., S. E. Thompson, **B. M. Collins**, and S. L. Stephens. 2017. Managed wildfire effects on forest resilience and water in the Sierra Nevada. Ecosystems 20: 717-732.
57. Levine C. R., C. V. Cogbill, **B. M. Collins**, A. J. Larson, J. A. Lutz, M. P. North, C. M. Restaino, H. D. Safford, S. L. Stephens, and J. J. Battles. 2017. Evaluating a new method for reconstructing forest conditions from General Land Office survey records. Ecological Applications 27: 1498-1513.
58. Lydersen, J. M., **B. M. Collins**, M. L. Brooks, J. R. Matchett, K. L. Shive, N. A. Povak, and D. F. Smith. 2017. Evidence of fuels management and fire weather influencing fire severity in an extreme fire event. Ecological Applications 27: 2013-2030.
59. **Collins, B. M.**, J. T. Stevens, J. D. Miller, S. L. Stephens, P. M. Brown, and M. North. 2017. Alternative characterization of forest fire regimes: incorporating spatial patterns. Landscape Ecology 32: 1543-1552.

60. Stevens, J. T., **B. M. Collins**, J. D. Miller, M. P. North, and S. L. Stephens. 2017. Changing spatial patterns of stand-replacing fire in California mixed-conifer forests Forest Ecology and Management 406: 28-36.
61. Knapp, E. E., J. M. Lydersen, M. P. North, and **B. M. Collins**. 2017. Efficacy of variable density thinning and prescribed fire for restoring forest heterogeneity to mixed conifer forest in the central Sierra Nevada, CA. Forest Ecology and Management 406: 228-241.
62. **Collins, B. M.**, D. L. Fry, J. M. Lydersen, R. G. Everett, and S. L. Stephens. 2017. Impacts of different land management histories on forest change. Ecological Applications 27: 2475-2486.
63. Stephens, S. L., L. Maier, L. Gonen, J. D. York, **B. M. Collins**, and D. L. Fry. 2018. Variation in fire scar phenology from mixed conifer trees in the Sierra Nevada. Canadian Journal of Forest Research 48: 101-104.
64. Stephens, S. L., **B. M. Collins**, C. J. Fettig, M. Finney, C. M. Hoffman, E. E. Knapp, M. P. North, H. D. Safford, and R. Wayman. 2018. Drought, tree mortality, and wildfire in forests adapted to frequent fire. Bioscience 68: 77-88.
65. Kelly M., Y. Su, S. Di Tommaso, **B. M. Collins**, D. L. Fry, S. L. Stephens and Q. Guo. 2018. Impact of error in Lidar-derived canopy height and canopy base height on modeled wildfire behavior. Remote Sensing 10: 10.
66. Hagmann, R. K., J. T. Stevens, J. M. Lydersen, **B. M. Collins**, J. J. Battles, P. F. Hessburg, C. R. Levine, A. G. Merschel, S. L. Stephens, A. H. Taylor, J. F. Franklin, D. L. Johnson, and K. N. Johnson. 2018. Improving the use of early timber inventories in reconstructing historical dry forests and fire in the western United States: Comment. Ecosphere 9: e02232.
67. Leverkus, A. B., J. M. R. Benayas, J. Castro, D. Boucher, S. Brewer, **B. M. Collins**, D. C. Donato, S. Fraver, B. E. Kishchuk, E. J. Lee, D. B. Lindenmayer, E. Lingua, E. Macdonald, R. Marzano, C. C. Rhoades, A. Royo, S. Thorn, J. W. Wagenbrenner, K. Waldron, T. Wohlgemuth, and L. Gustafsson. 2018. Salvage logging effects on regulating and supporting ecosystem services – a systematic map. Canadian Journal of Forest Research 48: 983-1000.
68. **Collins, B. M.**, J. M. Lydersen, R. G. Everett, and S. L. Stephens. 2018. How does forest recovery following moderate severity fire influence effects of subsequent wildfire in mixed-conifer forests? Fire Ecology 4: 3.
69. Lydersen J.M. and **B. M. Collins**. 2018. Change in vegetation patterns over a large forested landscape based on historical and contemporary aerial photography. Ecosystems 21: 1348-1363.
70. Stephens, S. L., J. T. Stevens, **B. M. Collins**, R. A. York, and J. M. Lydersen. 2018. Historical and modern landscape forest structure in fir (*Abies*) dominated mixed conifer forests in the northern Sierra Nevada. Fire Ecology 14: 7.
71. Fry, D. L., J. T. Stevens, A. T. Potter, **B. M. Collins**, and S. L. Stephens. 2018. Surface fuel accumulation and decomposition in old-growth pine–mixed conifer forests, northwestern Mexico. Fire Ecology 14: 6.
72. Hu, T., Q. Ma, Y. Su, J. J. Battles, **B. M. Collins**, S. L. Stephens, M. Kelly, and Q. Guo. 2019. A simple and integrated approach for fire severity assessment using bi-temporal

airborne LiDAR data. International Journal of Applied Earth Observations and Geoinformation 78: 25-38

73. Tubbesing, C. L., D. L. Fry, G. B. Roller, **B. M. Collins**, V. A. Fedorova, S. L. Stephens, and J. J. Battles. 2019. Strategically placed landscape fuel treatments decrease fire severity and promote recovery in the northern Sierra Nevada. Forest Ecology and Management 436: 45-55.
74. **Collins, B. M.**, J. M. Miller, E. E. Knapp, and D. B. Sapsis. 2019. A quantitative comparison of forest fires in central and northern California under early (1911-1924) and contemporary (2002-2015) fire suppression. International Journal of Wildland Fire 28: 138-148.
75. Stephens, S. L., L. N. Kobziar, **B. M. Collins**, R. Davis, P. Z. Fulé, W. Gaines, J. L. Ganey, J. M. Guldin, P. F. Hessburg, K. Hiers, S. Hoagland, J. J. Keane, R. E. Masters, A. E. McKellar, W. Montague, M. P. North, and T. A. Spies. 2019. Is fire "for the birds"? How two rare species influence fire management across the United States. Frontiers in Ecology and the Environment 17: 391-399.
76. Lydersen, J. M., **B. M. Collins**, and C. T. Hunsaker. 2019. Implementation constraints limit benefits of restoration treatments in mixed conifer forests International Journal of Wildland Fire 28:495-511.
77. Levine, C. R., C. V. Cogbill, **B. M. Collins**, A. J. Larson, J. A. Lutz, M. P. North, C. M. Restaino, H. D. Safford, S. L. Stephens, and J. J. Battles. 2019. Estimating historical forest density from land-survey data: A response to Baker and Williams (2018). Ecological Applications *in press*.
78. Hessburg, P. F., C. Miller, S. A. Parks, N. A. Povak, A. H. Taylor, P. E. Higuera, S. Prichard, M. P. North, **B. M. Collins**, M. D. Hurteau, A. J. Larson, C. D. Allen, S. L. Stephens, H. Rivera-Huerta, C. S. Stevens-Rumann, L. D. Daniels, Z. Gedalof, R. W. Gray, V. R. Kane, D. J. Churchill, R. K. Hagmann, T. A. Spies, C. A. Cansler, R. T. Belote, T. T. Veblen, M. A. Battaglia, C. M. Hoffman, C. N. Skinner, H. D. Safford, and R. B. Salter. 2019. Climate, environment, and disturbance history govern resilience of Western North American forests. Frontiers in Ecology and Evolution 7: 239.
79. Kane, V. R., B. N. Bartl-Geller, M. P. North, J. T. Kane, J. M. Lydersen, S. A. Jeronimo, **B. M. Collins**, and L. M. Moskal. 2019. First-entry wildfires can create opening and tree clump patterns characteristic of resilient forests. Forest Ecology and Management 454: 117659.
80. Lydersen, J. M., **B. M. Collins**, M. Coppoletta, M. R. Jaffe, H. Northrop, and S. L. Stephens. 2019. Fuel dynamics and reburn severity following high severity fire in a Sierra Nevada mixed-conifer forest. Fire Ecology 15: 43.
81. **Collins, B. M.**, S. L. Stephens, and R. A. York. 2019. Perspectives from a long-term study of fuel reduction and forest restoration in the Sierra Nevada. Tree Rings 29:7-9. (synthesis, not peer-reviewed).
82. Levine, J. I., **B. M. Collins**, R. A. York, D. R. Foster, D. L. Fry, and S. L. Stephens. 2020. Forest stand and site characteristics influence fuel consumption in repeat prescribed burns. International Journal of Wildland Fire *in press*.

83. Povak, N. A., V. R. Kane, **B. M. Collins**, J. M. Lydersen, and J. T. Kane. 2020. Multi-scaled drivers of severity patterns vary across land ownerships for the 2013 Rim Fire, California. Landscape Ecology *in press*.

84. Stevens, J. T., G. F. S. Boisrame, E. Rakhmatulina, S. E. Thompson, **B. M. Collins**, and S. L. Stephens. 2020. Forest vegetation change and its impacts on soil water following 47 years of managed wildfire. Ecosystems *in press*.

Book chapters (peer-reviewed)

1. Stephens, S. L., and **B. M. Collins**. 2007. Fire policy in the urban-wildland interface in the United States: what are the issues and possible solutions? Pages 33-42 *in* A. Troy, R. Kennedy, editors. Living on the Edge: Economic, Institutional and Management Perspectives on Wildfire Hazard in the Urban Interface. Advances in the Economics of Environmental Resources, volume 6, Elsevier.

2. North, M., **B. M. Collins**, H. D. Safford, and N. L. Stephenson. 2016. Montane Forests. Pages 553-577 *in* H. Mooney and E. Zavaleta, editors. Ecosystems of California, University of California Press, Berkeley, CA.

3. **Collins, B. M.**, J. D. Miller, J. M. Kane, D. L. Fry, and A. E. Thode. 2018. Characterizing fire regimes. Pages 71-86 *in* J. W. van Wagtendonk, N. G. Sugihara, S. L. Stephens, K. E. Shaffer, J. Fites, and A. E. Thode, editors. Fire in California's Ecosystems, University of California Press, Berkeley, CA, USA.

4. van Wagtendonk, J. W., J. A. Fites-Kaufman, H. D. Safford, M. P. North, and **B. M. Collins**. 2018. Sierra Nevada bioregion. Pages 249-278 in N. G. Sugihara, J. W. van Wagtendonk, K. E. Shaffer, J. A. Fites-Kaufman, and A. E. Thode, editors. Fire in California's Ecosystems University of California Press, Berkeley, CA.

5. Stephens, S. L., S. J. Husari, T. Nichols, N. G. Sugihara, and **B. M. Collins**. 2018. Fire and fuel management. Pages 411-428 in N. G. Sugihara, J. W. van Wagtendonk, K. E. Shaffer, J. A. Fites-Kaufman, and A. E. Thode, editors. Fire in California's Ecosystems University of California Press, Berkeley, CA.

6. Hoffman C.M., **Collins B.M.** and Battaglia M.A. 2018. Wildland fuel treatments. *In* Manzello S. (ed.), Encyclopedia of Wildfires and Wildland-Urban Interface Fires. Springer.

Agency-published reports (peer-reviewed)

1. Finney, M. A., R. Bartlette, L. Bradshaw, K. Close, **B. M. Collins**, P. Gleason, W. M. Hao, P. Langowski, J. McGinely, C. W. McHugh, E. Martinson, P. N. Omi, W. Shepperd, and K. Zeller. 2003. Part 1: Fire behavior, fuels treatments, and fire suppression on the Hayman fire. Pages 33-180 *in* Graham, R.T., technical editor. Hayman fire case study. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Ogden, UT. RMRS-GTR-114.

2. **Collins, B. M.**, and S. L. Stephens. 2012. Chapter 1: Fire and fuels reduction. Page 184 *in* M. North, editor. Managing Sierra Nevada Forests. General Technical Report PSW-GTR-237 U. S. Department of Agriculture, Forest Service, Pacific Southwest Research Station, Albany, CA.

3. **Collins, B. M.**, and C. Skinner. 2014. Chapter 4.1: Fire and fuels, in J. Long, C. Skinner, and L. Quinn-Davidson, technical editors. Science synthesis to promote resilience of social-

ecological systems in the Sierra Nevada and southern Cascades. U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station, General Technical Report PSW-GTR-247. Albany, CA.

4. North, M. P., M. W. Schwartz, **B. M. Collins**, and J. J. Keane. 2017. Chapter 5: Current and projected condition of mid-elevation Sierra Nevada forests, in R. J. Gutiérrez, P. N. Manley , and P. A. Stine, technical editors. The California spotted owl: current state of knowledge. U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station, General Technical Report PSW-GTR-254. Albany, CA.