

## Curriculum Vitae: Peter Mark Brown

Director and President, Rocky Mountain Tree-Ring Research, Inc.

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## Education

Ph.D. Forest Sciences; Colorado State University, Fort Collins (2003)

M.S. Watershed Management; The University of Arizona, Tucson (1991)

B.A. Anthropology; The University of Arizona, Tucson (1984)

## Professional Experience

1997 - present Director: Rocky Mountain Tree-Ring Research, Inc., Fort Collins, Colorado

1993 - 1997 Affiliate Scientist: Rocky Mountain Research Station, Fort Collins, Colorado

1990 - 1993 Research Specialist: Laboratory of Tree-Ring Research, University of Arizona, Tucson

1988 - 1990 Graduate Research Assistant: Laboratory of Tree-Ring Research, University of Arizona

## Recent Awards

2018 Senior Wildland Fire Ecologist; Association for Fire Ecology

2010 Outstanding Environmentalist of Mongolia; Mongolia Minister of Nature & Green Development

2008 Richard L. Holmes Award for Outstanding Service to Dendrochronology; Tree-Ring Society

## Professional Service

2016 - present Affiliate Faculty, Dept. of Forest and Rangeland Stewardship, Colorado State University

2010 - present Member, Landscape Restoration Review Team, Front Range Roundtable

2014 - 2020 Member, Colorado Prescribed Fire Council Steering Committee

2016 - 2019 Affiliate Faculty, Department of Integrative Biology, University of Colorado-Denver

2013 - 2018 Administrative Director, Tree-Ring Society

2011 - 2017 Research Associate, Dept. of Anthropology, Denver Museum of Nature and Science

2011 - 2016 Affiliate Faculty, Dept. of Ecosystem Science and Sustainability, Colorado State University

2010 June Member, Advisory Committee, 8<sup>th</sup> Inter. Conf. on Dendrochronology, Rovaniemi, Finland

2009 - 2013 Member, Fire and Climate Synthesis (USFS) Scientific Advisory Committee

2009 May Co-Director, Workshop on Concepts in Dendrochronology: Srinigar, India

2008 June Co-Chair; 1<sup>st</sup> American Dendrochronological Conf. (AmeriDendro 2008): Vancouver, BC

2008 - 2013 Affiliate Faculty, Program in Ecology, University of Wyoming

2008 - 2011 Affiliate Faculty, Department of Geography & Geology, West Virginia University

2008 - 2011 Secretary, Tree-Ring Society

2008 - 2014 Affiliate Faculty, School of Forestry, Northern Arizona University

2007 - 2012 Affiliate Faculty, Graduate Degree Program in Ecology, Colorado State University

2006 June Co-Chair, 7<sup>th</sup> International Conference on Dendrochronology, Beijing, China

2006 - 2015 Member, Scientific Advisory Panel, Fire History Analysis and Exploration System (FHAES)

2005 - 2013 Associate Editor, *International Journal of Wildland Fire*

2004 - 2007 President, Tree-Ring Society

2004 - 2006 Affiliate Faculty, Department of Forest Resources, University of Idaho

2004 Dec Co-Organizer, Fire, Climate, and Ecosystems Special Session, AGU, San Francisco

2003 - 2013 Co-Chair and Member, Inter. Multiproxy Paleofire Database Advisory Board, NCDC

2000 - 2011 Affiliate Faculty, Forest, Rangeland, and Watershed Stewardship, Colorado State Univ.

1999 - 2003     Treasurer, Tree-Ring Society  
1992 - 2002     Director or Co-Director, North American Dendroecological Fieldweek

### Teaching Experience

Fall 2020     Forest Ecology (3-unit undergraduate lecture course); Colorado State University  
Spring 2017-20   Fire Ecology (3-unit graduate online lecture course); Colorado State University  
Spring 2016     Forest Ecology (3-unit undergraduate lecture course); Colorado State University  
Spring 2013     Fire Effects and Adaptations (3-unit undergrad lecture course); Colorado State University  
2008 - 2011     Fire Ecology (3-unit undergrad courses; spring semesters); Front Range Comm. College  
March 2010     Ecology & Manag. of Tropical Montane Ecosystems (workshop); Dominican Republic  
Fall 2009     Forest Ecology (3-unit undergraduate lecture course); Colorado State University  
Fall 2009     Introduction to Dendrochronology (1-unit grad seminar); Colorado State University  
May 2009     Dendrochronology Fieldweek and Workshop; Srinigar, Uttarakhand, India  
Fall 2008     Fire Effects and Adaptations (3-unit undergrad lecture course); Colorado State University  
Fall 2008     IPCC AR4: State of Global Climate Change (1-unit grad seminar); Colorado State Univ.  
Spring 2008     Fire Ecology (3-unit grad lecture course); Colorado State University  
Spring 2008     Introduction to Dendrochronology (1-unit grad seminar); Colorado State University  
March 2008     Fire Ecology & Forest Restoration; Continuing Education in Ecosystem Management  
Fall 2007     Forest Ecology (3-unit undergrad lecture course); Colorado State University  
Fall 2007     IPCC AR4: State of Global Climate Change (1-unit grad seminar); Colorado State Univ.  
June 2006     International Dendroecological Fieldweek; Ulaanbaatar, Mongolia  
Fall 2003     Introduction to Dendrochronology (3-unit undergrad lecture & lab); Colorado State Univ.  
June 2000     1st South American Dendroecological Fieldweek; San Martin de los Andes, Argentina  
July 1998     Fire History & Dendrochronology; Fire in California Ecosystems, Univ. of California-Davis  
1994 - 1996     Dendrochronological Methods & Principles (undergrad course); Univ. of Colo.-Boulder  
1993 - present   North American Dendroecological Fieldweek (summer workshop) (Director & Instructor)

### Publications (Google Scholar h-index: 35)

#### Book chapters

3. **Brown, P.M.** 2013. Dendrochronology: Fire regimes. In: W.J. Rink and J. Thompson (ed.), *Encyclopedia of Scientific Dating Methods*. Springer. [http://dx.doi.org/10.1007/978-94-007-6326-5\\_76-4](http://dx.doi.org/10.1007/978-94-007-6326-5_76-4)
2. **Brown, P.M.** 2010. Wildfire risk and ecological restoration in mixed-severity fire regimes. Pages 361-363 in: M. Stoffel, M. Bollschweiler, D.R. Butler and B.H. Luckman (ed.), *Tree-ring Reconstructions in Natural Hazards Research: A State-of-the-Art*. Advances in Global Change Research Series, Springer. [http://dx.doi.org/10.1007/978-90-481-8736-2\\_33](http://dx.doi.org/10.1007/978-90-481-8736-2_33)
1. Swetnam, T.W, and **P.M. Brown**. 2010. Climatic inferences from dendroecological reconstructions. Pages 263-295 in: M.K. Hughes, H.F. Diaz, and T.W. Swetnam (ed.), *Dendroclimatology: Progress and Prospects*. Developments in Paleoenvironmental Research Vol. 11, Springer. [http://dx.doi.org/10.1007/978-1-4020-5725-0\\_9](http://dx.doi.org/10.1007/978-1-4020-5725-0_9)

#### Peer-reviewed papers

76. Haines, H.A., B.L. Muñoz, M. Rooney, M.B. Foard, S.N. Stotts, L. van Akker, and **P.M. Brown**. In review. Growth patterns and climate response of four co-occurring *Pinus* species on Norumbega Mountain, Acadia National Park, Maine, USA. *Tree-Ring Research*.
75. Brown S.R., A. Baysinger, **P.M. Brown**, J.L. Cheek, J.M. Diez, C.M. Gentry, T.A. Grant III, J.-M. St. Jacques, D.A. Jordan, M.L. Leef, M.K. Rourke, J.H. Speer, C.E. Spradlin, J.T. Stevens, J.R. Stone, B. Van

- Winkle, and N.E. Zeibig-Kichas. 2020. Fire history across forest types in the southern Beartooth Mountains, Wyoming. *Tree-Ring Research* 76(1):27-39. <http://dx.doi.org/10.3959/TRR2018-11>
74. Meunier, J. N.S. Holoubek, **P.M. Brown**, and M. Sebasky. 2019. Re-evaluating pattern and process to understand resilience in transitional mixed conifer forests. *Ecology*. 100( 11):e02839  
<https://doi.org/10.1002/ecy.2839>
73. **Brown, P.M.**, C. Gentry, and Q. Yao. 2019. Historical and current fire regimes in Zion National Park, Utah: restoration of pattern and process after a century of fire exclusion. *Forest Ecology and Management* 445:1-12. <https://doi.org/10.1016/j.foreco.2019.04.058>
72. **Brown, P.M.**, B. Gannon, M.A. Battaglia, P.J. Fornwalt, L.S. Huckaby, A.S. Cheng, and L.S. Baggett. 2019. Identifying old trees to inform ecological restoration in montane forests of the central Rocky Mountains, USA. *Tree-Ring Research* 75(1):34-48. <http://dx.doi.org/10.3959/1536-1098-75.1.34>
71. Battaglia, M.A., B. Gannon, **P.M. Brown**, P.J. Fornwalt, A.S. Cheng, and L.S. Huckaby. 2018. Changes in forest structure since 1860 in montane ponderosa pine dominated forests of the Colorado Front Range, USA. *Forest Ecology and Management* 422:147-160.  
<https://doi.org/10.1016/j.foreco.2018.04.010>
70. Cannon, J.B., K.J. Barrett, B.M. Gannon, R.N. Addington, M.A. Battaglia, P.J. Fornwalt, G.H. Aplet, A.S. Cheng, J.L. Underhill, J.S. Briggs, and **P.M. Brown**. 2018. Collaborative restoration effects on forest structure in ponderosa pine-dominated forests of Colorado. *Forest Ecology and Management* 424:191–204. <https://doi.org/10.1016/j.foreco.2018.04.026>
69. Harley, G.L, C.H. Baisan, **P.M. Brown**, H.D. Grissino-Mayer, D.A. Falk, W.T. Flatley, A. Hessler, E.K. Heyerdahl, M.W. Kaye, C.W. Lafon, E.Q. Margolis, R.S. Maxwell, A.T. Naito, W.J. Platt, M.T. Rother, T. Saladyga, R.L. Sherriff, L.A. Stachowiak, M.C. Stambaugh, E. Kennedy Sutherland, and A.H. Taylor. 2018. Advancing dendrochronological studies of fire in the United States. *Fire* 1, 11;  
<http://dx.doi.org/10.3390/fire1010011>
68. Addington, R.N., G.H. Aplet, M.A. Battaglia, J.S. Briggs, **P.M. Brown**, A.S. Cheng, Y. Dickinson, J.A. Feinstein, K.A. Pelz, C.M. Regan, J. Thinner, R. Truex. P.J. Fornwalt, B. Gannon, C.W. Julian, J.L. Underhill, and B. Wolk. 2018. Principles and practices for the restoration of ponderosa pine and dry mixed-conifer forests of the Colorado Front Range. USDA Forest Service, Rocky Mountain Research Station, General Technical Report GTR-373.
67. Collins, B.M., J.T. Stevens, J.D. Miller, S.L. Stephens, **P.M. Brown**, and M.P. North. 2017. Alternative characterization of forest fire regimes: incorporating spatial patterns. *Landscape Ecology* 32:1543–1552. <http://dx.doi.org/10.1007/s10980-017-0528-5>
66. Yao, Q., **P.M. Brown**, S. Liu, M.E. Rocca, V. Trouet, B. Zheng, H. Chen, Y. Li, D. Liu, and X. Wang. 2017. Pacific-Atlantic Ocean influence on wildfires in northeast China (1774-2010). *Geophysical Research Letters* 44 <http://dx.doi.org/10.1002/2016GL071821>
65. Yocom Kent, L.L., P.Z. Fulé, **P.M. Brown**, J. Cerano, E. Cornejo-Oviedo, C. Cortés Montaña, S.A. Drury, D.A. Falk, J. Meunier, H.M. Poulos, C.N. Skinner, S. Stephens, J. Villanueva-Díaz. 2017. Climate drives fire synchrony but local factors control fire regime change in northern Mexico. *Ecosphere* 8:e01709. 10.1002/ecs2.1709. <http://dx.doi.org/10.1002/ecs2.1709>
64. Fornwalt, P.J., L.S. Huckaby, S.K. Alton, M.R. Kaufmann, **P.M. Brown**, and A.S. Cheng. 2016. Did the Hayman Fire, Colorado, burn with uncharacteristic severity? *Fire Ecology* 12:117-132.  
<http://dx.doi.org/10.4996/fireecology.1203117>
63. Keyser, T.L., and **P.M. Brown**. 2016. Drought response of upland oak (*Quercus* L.) species in Appalachian hardwood forests of the southeastern USA. *Annals of Forest Science* 73:971-986  
<http://dx.doi.org/10.1007/s13595-016-0575-0>
62. 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. <http://dx.doi.org/10.1016/j.foreco.2016.01.034>
61. Stevens, J.T., H.D. Safford, M.P. North, J.S. Fried, A.N. Gray, **P.M. Brown**, C.R. Dolanc, S.Z. Dobrowski, D.A. Falk, C.A. Farris, J.F. Franklin, P.Z. Fulé, R.K. Hagmann, E.E. Knapp, J.D. Miller, D.F. Smith, T.W. Swetnam, and A.H. Taylor. 2016. Average stand age from forest inventory plots does not describe historical fire regimes in ponderosa pine and mixed-conifer forests of western North America. *PLoS ONE* 11(5): e0147688. <http://dx.doi.org/10.1371/journal.pone.0147688>
60. Hessler, A.E., **P.M. Brown**, O. Byambasuren, S. Cockrell, C. Leland, E. Cook, B. Nachin, N. Pederson, T. Saladyga, and B. Suran. 2016. Fire and climate in Mongolia (1532–2010 Common Era). *Geophysical Research Letters* 43:6519–6527, <http://dx.doi.org/10.1002/2016GL069059>
59. **Brown, P.M.**, M.A. Battaglia, B. Gannon, P. Fornwalt, L. Huckaby, C. Julian, and A.S. Cheng. 2015. Historical (1860) forest structure in ponderosa pine forests of the northern Front Range, Colorado. *Canadian Journal of Forest Research* 45:1462–1473. <http://dx.doi.org/10.1139/cjfr-2014-0387>
58. Keyser, T.L., and **P.M. Brown**. 2014. Climate-growth relationships for yellow-poplar across structural and site quality gradients in the southern Appalachian Mountains. *Forest Ecology and Management* 329:158-165. <http://dx.doi.org/10.1016/j.foreco.2014.06.015>
57. Miller, I.M., J.S. Pigati, R.S. Anderson, K.R. Johnson, S.A. Mahan, T.A. Ager, R.G. Baker, M. Blaauw, J. Bright, **P.M. Brown**, B. Bryant, Z.T. Calamari, P.E. Carrara, M.D. Cherney, J.R. Demboski, S.A. Elias, D.C. Fisher, H.J. Gray, D.R. Haskett, J.S. Honke, S.T. Jackson, G. Jiménez-Moreno, D. Kline, E.M. Leonard, N.A. Lifton, C. Lucking, H.G. McDonald, D.M. Miller, D.R. Muhs, S.E. Nash, C. Newton, J.B. Paces, L. Petrie, M.A. Plummer, D.F. Porinchu, A.N. Rountrey, E. Scott, J.J.W. Sertich, S.E. Sharpe, G.L. Skipp, L.E. Strickland, R.K. Stucky, R.S. Thompson, J. Wilson. 2014. A high-elevation, multi-proxy biotic and environmental record of MIS 6-4 from the Ziegler Reservoir fossil site, Snowmass Village, Colorado, USA. *Quaternary Research* 82:618-634. <http://dx.doi.org/10.1016/j.yqres.2014.07.004>
56. Rocca, M.E., **P.M. Brown**, L.H. MacDonald, and C.M. Carrico. 2014. Climate change impacts on fire regimes and key ecosystem services in Rocky Mountain forests. *Forest Ecology and Management* 327:290-305. <http://dx.doi.org/10.1016/j.foreco.2014.04.005>
55. Meunier, J., W.H. Romme, and **P.M. Brown**. 2014. Climate and land-use effects on wildfire in northern Mexico, 1650-2010. *Forest Ecology and Management* 325:49-59. <http://dx.doi.org/10.1016/j.foreco.2014.03.048>
54. **Brown, P.M.**, S.E. Nash, and D. Kline. 2014. Identification and dendrochronology of wood found at the Ziegler Reservoir Fossil Site, Colorado. *Quaternary Research* 82:575-579. <http://dx.doi.org/10.1016/j.yqres.2014.02.006>
53. Yocom, L.L., P.Z. Fulé, C. García-Domínguez, D.A. Falk, E. Cornejo-Oviedo, **P.M. Brown**, J. Villanueva-Díaz, J. Cerano, C. Cortés Montaño. 2014. Fine-scale factors influence fire regimes on three mountain tops in Mexico. *International Journal of Wildland Fire* 23:959-968. <http://dx.doi.org/10.1071/WF13214>
52. Meunier, J., **P.M. Brown** and W.H. Romme. 2014. Tree recruitment in relation to climate and fire in northern Mexico. *Ecology* 95:197-209. <http://dx.doi.org/10.1890/13-0032.1>
51. Keyser, T.L., and **P.M. Brown**. 2014. Long-term response of yellow-poplar to thinning in the southern Appalachian Mountains. *Forest Ecology and Management* 312:148-153. <http://dx.doi.org/10.1016/j.foreco.2013.10.010>
50. Anderson, R.S., A. Ejarque, **P.M. Brown**, and D. Hallett. 2013. Holocene and historical vegetation change and fire history on the north-central coast of California. *The Holocene* 23:1797-1810. <http://dx.doi.org/10.1177/0959683613505344>

49. Fulé, P.Z., T.W. Swetnam, **P.M. Brown**, D.A. Falk, D.L. Peterson, and C.D. Allen, G.H. Aplet, M.A. Battaglia, D. Binkley, C. Farris, R.E. Keane, E.Q. Margolis, H.D. Grissino-Mayer, C. Miller, C. Hull Sieg, C. Skinner, S. L. Stephens, and A. Taylor. 2013. Unsupported inferences of high-severity fire in historical western United States dry forests: Response to Williams and Baker. *Global Ecology and Biogeography* 23:825-830. <http://dx.doi.org/10.1111/geb.12136>
48. Pederson, N., C. Leland, B. Nachin, A. E. Hessler, A. R. Bell, D. Martin-Benito, T. Saladyga, B. Suran, **P.M. Brown** and N. Davi. 2013. Three centuries of shifting hydroclimatic regimes across the Mongolian breadbasket. *Agricultural and Forest Meteorology* 178-179:10-20. <http://dx.doi.org/10.1016/j.agrformet.2012.07.003>
47. Hessler, A.E., U. Ariya, **P.M. Brown**, O. Byambasuren, T. Green, G. Jacoby, E. Kennedy Sutherland, B. Nachin, R.S. Maxwell, N. Pederson, L. De Grandpré, T. Saladyga, and J.C. Tardif. 2012. Reconstructing fire history in central Mongolia from tree-rings. *International Journal of Wildland Fire* 21:86-92. <http://dx.doi.org/10.1071/WF10108>
46. Wang, X., **P.M. Brown**, Y. Zhang, and L. Song. 2011. Imprint of the Atlantic Multidecadal Oscillation on Tree-Ring Widths in Northeastern Asia since 1568. *PLoS ONE* 6(7): e22740. <http://dx.doi.org/10.1371/journal.pone.0022740>
45. Falk, D.A., E.K. Heyerdahl, **P.M. Brown**, C. Farris, P.Z. Fulé, D. McKenzie, T.W. Swetnam, A.H. Taylor, and M.L. Van Horne. 2011. Multi-scale controls of historical forest-fire regimes: new insights from fire-scar networks. *Frontiers in Ecology and the Environment* 9: 446–454. <http://dx.doi.org/10.1890/100052>
44. Heyerdahl, E.K., **P.M. Brown**, S.G. Kitchen and M.H. Weber. 2011. Multicentury fire and forest histories at 19 sites in Utah and eastern Nevada. General Technical Report RMRS-GTR-261WWW. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mtn. Research Station. 192 p.
43. **Brown, P.M.**, A. Bhattacharyya and S.K. Shah. 2011. Potential for developing fire histories in chir pine (*Pinus roxburghii*) forests in the Himalayan foothills. *Tree-Ring Research* 67:57-62. <http://dx.doi.org/10.3959/2009-15.1>
42. Falk, D.A., E. K. Heyerdahl, **P. M. Brown**, T. W. Swetnam, E. K. Sutherland, Z. Gedalof, L. Yocom, and T. J. Brown. 2010. Fire and climate variation in western North America from fire-scar and tree-ring networks. *PAGES (Past Global Climate Changes) News* 18(2):70-72.
41. Yocom, L.L., P.Z. Fulé, **P.M. Brown**, J. Cerano, J. Villanueva-Díaz, D.A. Falk, E. Cornejo-Oviedo. 2010. El Niño-Southern Oscillation effect on a fire regime in northeastern Mexico has changed over time. *Ecology* 91:1660-1671. <http://dx.doi.org/10.1890/09-0845.1>
40. Swetnam, T.L., and **P.M. Brown**. 2010. Comparing selected Fire Regime Condition Class (FRCC) and LANDFIRE vegetation model results to tree-ring data. *International Journal of Wildland Fire* 19:1-13. <http://dx.doi.org/10.1071/WF08001>
39. Swetnam, T.W., C.H. Baisan, A.C. Caprio, **P.M. Brown**, R. Touchan, R.S. Anderson, and D.J. Hallett. 2009. Multi-millennial fire history from the Giant Forest, Sequoia National Park, California. *Fire Ecology* 5:120-150. <http://dx.doi.org/10.4996/fireecology.0503120>
38. Romme, W.L., C.D. Allen, J.D. Bailey, W.L. Baker, B.T. Bestelmeyer, **P.M. Brown**, K.S. Eisenhart, M.L. Floyd, D.W. Huffman, B.F. Jacobs, R.F. Miller, E.H. Muldavin, T.W. Swetnam, R.J. Tausch, and P.J. Weisberg. 2009. Historical and modern disturbance regimes, stand structures, and landscape dynamics in piñon-juniper vegetation of the western United States. *Rangeland Ecology and Management* 62:203-222. <http://dx.doi.org/10.2111/08-188R1.1>
37. Péwé, T.L., J.A. Westgate, S.J. Preece, **P.M. Brown**, and S.W. Leavitt. 2009. Late Pliocene Dawson Cut Forest Bed and new tephrochronological findings in the Gold Hill Loess, east-central Alaska. *Geological Society of America Bulletin* 121:294-320. <http://dx.doi.org/10.1130/B26323.1>

36. **Brown, P.M.**, C.L. Wienk, and A.J. Symstad. 2008. Fire and forest history at Mount Rushmore. *Ecological Applications* 18:1984-1999. <http://dx.doi.org/10.1890/07-1337.1>
35. **Brown, P.M.**, and A.W. Schoettle. 2008. Fire and stand history in two limber pine (*Pinus flexilis*) and Rocky Mountain bristlecone pine (*Pinus aristata*) stands in Colorado. *International Journal of Wildland Fire* 17:339-347. <http://dx.doi.org/10.1071/WF06159>
34. **Brown, P.M.**, E.K. Heyerdahl, S.T. Kitchen, and M.H. Weber. 2008. Climate effects on historical fires (1630-1900) in Utah. *International Journal of Wildland Fire* 17:28-39. <http://dx.doi.org/10.1071/WF07023>
33. Kitzberger, T., **P.M. Brown**, E.K. Heyerdahl, T.W. Swetnam, and T.T. Veblen. 2007. Contingent Pacific-Atlantic Ocean influence on multi-century wildfire synchrony over western North America. *Proceedings of the National Academy of Sciences* 104:543-548. <http://dx.doi.org/10.1073/pnas.0606078104>
32. **Brown, P.M.** 2007. A modified increment borer handle for coring in locations with obstructions. *Tree-Ring Research* 63:61-62. <http://dx.doi.org/10.3959/1536-1098-63.1.61>
31. **Brown, P.M.** 2007. What was the role of fire in coast redwood forests? In: Standiford, R.B., Giusti, G.A., Valachovic, Y., Zielinski, W.J., Furniss, M.J. (technical editors). *Proceedings of the Redwood Region Forest Science Symposium: What Does the Future Hold?* USDA Forest Service General Technical Report PSW-GTR-194. Albany, CA; p. 215-218.
30. **Brown, P.M.** 2006. Climate effects on fire regimes and tree recruitment in Black Hills ponderosa pine forests. *Ecology* 87:2500-2510. [http://dx.doi.org/10.1890/0012-9658\(2006\)87\[2500:CEOFRA\]2.0.CO;2](http://dx.doi.org/10.1890/0012-9658(2006)87[2500:CEOFRA]2.0.CO;2)
29. Binkley, D, M.M. Moore, W.H. Romme, and **P.M. Brown**. 2006. Was Aldo Leopold right about the Kaibab deer herd? *Ecosystems* 9:227-241. <http://dx.doi.org/10.1007/s10021-005-0100-z>
28. **Brown, P.M.**, and B. Cook. 2006. Early settlement forest structure in Black Hills ponderosa pine forests. *Forest Ecology and Management* 223:284-290. <http://dx.doi.org/doi:10.1016/j.foreco.2005.11.008>
27. **Brown, P.M.**, and R. Wu. 2005. Climate and disturbance forcing of episodic tree recruitment in a southwestern ponderosa pine forest. *Ecology* 86:3030-3038. <http://dx.doi.org/10.1890/05-0034>
26. **Brown, P.M.**, and W.T. Baxter. 2003. Fire history in coast redwood forests of the Mendocino Coast. *Northwest Science* 77:147-158.
25. Woodhouse, C.A., J.J. Lukas, and **P.M. Brown**. 2002. Drought in the Western Great Plains, 1845-56: Impacts and Implications. *Bulletin of the American Meteorological Society* 83:1485-1493. <http://dx.doi.org/10.1175/BAMS-83-10-1485>
24. **Brown, P.M.**, and W.D. Shepperd. 2001. Fire history and fire climatology along a 5° gradient in latitude in Colorado and Wyoming, USA. *Palaeobotanist* 50:133-140.
23. **Brown, P.M.**, D.R. D'Amico, A.T. Carpenter, and D.M. Andrews. 2001. Restoration of montane ponderosa pine forests in the Colorado Front Range: A Forest Ecosystem Management Plan for the City of Boulder. *Ecological Restoration* 19:19-26. <http://dx.doi.org/doi:10.3368/er.19.1.19>
22. **Brown, P.M.**, M.W. Kaye, L. Huckaby, and C. Baisan. 2001. Fire history along environmental gradients in the Sacramento Mountains, New Mexico: Influences of local patterns and regional processes. *Écoscience* 8:115-126.
21. Woodhouse, C.A., and **P.M. Brown**. 2001. Tree-ring evidence for Great Plains drought. *Tree-Ring Research* 57:89-103. <http://hdl.handle.net/10150/262536>
20. **Brown, P.M.**, M.G. Ryan, and T.G. Andrews. 2000. Historical Fire Frequency in Ponderosa Pine Stands in Research Natural Areas, Central Rocky Mountains and Black Hills, US. *Natural Areas Journal* 20:133-139.

19. Kaufmann, M.R., Regan, C.M., and **P.M. Brown**. 2000. Heterogeneity in ponderosa pine/Douglas-fir forests: Age and size structure in unlogged and logged landscapes of central Colorado. *Canadian Journal of Forest Research* 30:698-711. <http://dx.doi.org/10.1139/x99-255>
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### **Selected additional publications**

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- Brown, P.M.**, Falk, D.A., Swetnam, T.W. 2014. Historical and current fire regimes and vegetation structures in selected plant communities at Zion National Park, Utah. Final Report to National Park Service. 47 p.
- Aplet, G., **P.M. Brown**, J. Briggs, S. Mayben, D. Edwards, T. Cheng. 2014. Collaborative Implementation of Forest Landscape Restoration in the Colorado Front Range. Colorado Forest Restoration Institute, Colorado State University, Technical Brief CFRI-TB-1403, Fort Collins, CO. 9p.  
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- Dickinson, Y.L., R. Addington, G. Aplet, M. Babler, M. Battaglia, **P.M. Brown**, T. Cheng, C. Cooley, D. Edwards, J. Feinstein, P. Fornwalt, H. Gibbs, M. Matonis, K. Pelz, C. Regan. 2014. Desirable forest structures for a restored Front Range. Colorado Forest Restoration Institute, Colorado State University, Technical Brief CFRI-TB-1402. 23 p.  
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- Clement, J., and **P.M. Brown**. 2011. Front Range Roundtable, Collaborative Forest Landscape Restoration Project 2011: Ecological, Social, and Economic Monitoring Plan. Colorado Forest Restoration Institute:  
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- Brown, P.M.**, M. Rocca, J. Clement, G. Hayward, C. Rhoades, B. Collins, and R. Skorkowsky. 2010. Some ecological considerations regarding the future range of variability of lodgepole pine ecosystems in Colorado and Wyoming. Colorado Forest Restoration Institute Technical Brief.  
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Romme, W.L., C.D. Allen, J.D. Bailey, W.L. Baker, B.T. Bestelmeyer, **P.M. Brown**, K.S. Eisenhart, L. Floyd-Hanna, D.W. Huffman, B.F. Jacobs, R.F. Miller, E.H. Muldavin, T.W. Swetnam, R.J. Tausch, and P.J. Weisberg. 2008. Historical and modern disturbance regimes, stand structures, and landscape dynamics in piñon-juniper vegetation of the western U.S. Colorado Forest Restoration Institute Special Publication; [http://www.fs.fed.us/rm/pubs\\_other/rmrs\\_2008\\_romme\\_w001.pdf](http://www.fs.fed.us/rm/pubs_other/rmrs_2008_romme_w001.pdf)

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City of Boulder (**P.M. Brown**, co-principal author). 1999. Forest Ecosystem Management Plan, Open Space and Mountain Parks. City of Boulder, Colorado.

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Swetnam, T.W., C.H. Baisan, **P.M. Brown**, and A.C. Caprio. 1989. Fire history of Rhyolite Canyon, Chiricahua National Monument. National Park Service Cooperative Park Studies Unit Technical Report No. 32, University of Arizona, Tucson. 47p.

### **Theses**

**Brown, P.M.** 2003. Fire, Climate, and Forest Structure in Ponderosa Pine Forests of the Black Hills. Ph.D. Dissertation, Colorado State University, Fort Collins. 103pp.

**Brown, P.M.** 1991. Dendrochronology and fire history in coast redwood (*Sequoia sempervirens*) near Redwood National Park, California. M.S. Thesis, The University of Arizona, Tucson. 90pp.

### **Research grants, awards, and contracts (~\$6.15 mil as of December 2019)**

Crossdating of Cores for Growth and Yield Modeling for Carbon Accounting. 5-9/2019. Blue Source LLC: \$14,500.

Crossdating of Fire-Scar Samples, Pagosa Ranger District. 4-7/2019. San Juan National Forest: \$6000.

San Juan National Forest/Mountain Studies Institute National Cohesive Strategy Operating Plan. 4-9/2019. San Juan National Forest and Colorado Forest Restoration Institute: \$6000.

Crossdating of Peel Tree Increment Cores and Cross Sections, San Juan National Forest. 8-11/2018. Paleocultural Research Group: \$3000.

Crossdating of Cores for Growth and Yield Modeling for Carbon Accounting. 6-8/2018. Blue Source LLC: \$8000.

Dendrochronological Analysis for Paleoenvironmental and Fire History Study of the La Botica Site and Environs, Colorado. 4-9/2018. Paleocultural Research Group: \$6000.

Historical Spatial Reconstruction in Ponderosa Pine Forests of the Black Hills. 12/2017-5/2018. USDA Forest Service Rocky Mountain Research Station: \$21,000.

Dendrochronological Analysis of Appomattox Plantation Outbuildings, Petersburg National Battlefield. 12/2017. USDI National Park Service: \$6180.

Growth and Yield in Mixed Hardwood Forests for Carbon Accounting, Minnesota and Wisconsin. 5/2017 - 7/2017. Blue Source LLC: \$10,250.

Reconstructing Fire Regimes and Forest History in Upland Ecosystems at Zion National Park. 8/2016 – 12/2018. USDI National Park Service: \$55,000.

Ecology and Resilience of Limber and Whitebark Pine Populations in Idaho and Wyoming. 9/2012 - 12/2018. Idaho Bureau of Land Management: \$59,300.

Fire and Forest History Reconstructions in Red Pine Forests of Wisconsin. 9/2016 – 12/2018. Wisconsin Department of Natural Resources: \$65,000.

Longleaf Pine Ecosystem Restoration, Fort Benning, Georgia. 8/2015 - 10/2017. US Department of Defense, US Army, Fort Benning: \$56,639.

Dating of Historic Cabins on Boulder County Parks and Open Space Lands. 6/2014 – 12/2018. Boulder County Parks and Open Space: \$4500.

Growth and Yield of Mixed Conifer Forests of California for Carbon Accounting. 7/2015 - 8/2015. Blue Source LLC: \$6600.

Growth Dynamics in the Climate Control of Tree-Ring Variability for Paleoclimatology. 1/2014 - 12/2016. National Science Foundation: \$600,000. Co-PI: Malcolm Hughes, University of Arizona.

Tree-Ring Analysis of Broadleaf Species from New England. 6/2014- 1/2015. USDA Forest Service, Northern Research Station: \$5000.

Reconstruction of Stand Structures and Fire Histories in Front Range Montane Forests. 10/2011 - 12/2015. Rocky Mountain Research Station, Arapahoe-Roosevelt and Pike-San Isabel National Forests, Colorado Forest Restoration Institute, and Boulder County Parks and Open Space: \$179,500.

An International Professional-Development Workshop in Dendrochronology: North American Dendroecological Fieldweek (NADEF). 6/2011 - 5/2016. National Science Foundation: \$277,000. Co-PIs: James Speer, Indiana State University; Henri Grissino-Mayer, University Tennessee-Knoxville; Chris Gentry, Austin Peay University.

Development of a Monitoring Program for the Colorado Front Range Landscape Restoration Project. 9/2010 - 7/2011. Colorado Forest Restoration Institute: \$15,000.

Natural Resource Condition Assessment for Selected Plant Communities of Zion National Park. 9/2010 - 6/2014. USDI National Park Service: \$50,000. Co-PIs: Tom Swetnam, Don Falk, University of Arizona.

Influence of Annual Climate Change on Carbon Sequestration in Forests of the Southern Appalachians. 10/2009 - 6/2012. Southern Research Station: \$87,500. Co-PI: Tara Keyser, USDA Forest Service Southern Research Station.

Fire and Climate Change in the Western US: A New Synthesis for Land Management. 4/2009 - 10/2011. Forest Service Climate Change Program and Joint Fire Science Program: \$370,000. Co-PIs: Tom Swetnam, Don Falk, University of Arizona; Elaine Sutherland, USDA Forest Service Rocky Mountain Research Station; Tim Brown, Desert Research Institute.

Fire, Climate, and Forest History in Mongolia. 1/2009 - 12/2012. National Science Foundation: \$635,000. Co-PIs: Amy Hessl, West Virginia University; Baatarbileg Nachin, National University of Mongolia; Neil Pederson, Eastern Kentucky University.

Fire Regimes and Lodgepole Pine in Southern Sierra Nevada Parks. 10/2008 - 6/2011. National Park Service: \$35,500. Co-PI: Tony Caprio, USDI National Park Service.

Analyses of Remnant Trees from the Frijilito Watershed Study, Bandelier National Monument, New Mexico. 6/2007 - 3/2011. USGS Biological Resources Division: \$56,000. Co-PI: Craig Allen, US Geological Survey.

Interaction of Fire, Climate, and Forest Structure in Northern Mexico. 4/2007 - 3/2011. National Science Foundation: \$703,000. Co-PIs: Peter Fulé, Northern Arizona University; Don Falk, University of Arizona; José Villanueva-Díaz, INIFAP; Eladio Cornejo-Oviedo, Universidad Autónoma Agraria Antonio Narro.

A Professional Development Workshop in Dendrochronology: North American Dendroecological Fieldweek (NADEF). 4/2005 - 3/2010. National Science Foundation: \$61,000. Co-PIs: James Speer, Indiana State University; Henri Grissino-Mayer, University of Tennessee-Knoxville.

Workshop on Concepts in Quaternary Climatic Studies with Emphasis in Palynology and Dendrochronology. 5/2009. Indo-US Science and Technology Forum: \$12,744. Co-PI: Amalava Bhattacharyya, Birbal Sahni Institute of Paleobotany, India.

Chronology Development for the Jackson Hole Area. 2/2007 - 12/2007. Teton Science School: \$10,000.

Reference Conditions for Fire Regime Condition Class: Comparing Historical and Model Data. 1/2005 - 5/2007; National Interagency Fuels Technology Transfer Team: \$81,000.

Fire and Forest History at Mount Rushmore National Memorial: Application and Demonstration of Fire Science. 8/2005 - 7/2007. Joint Fire Science Program and National Park Service: \$121,800. Co-PIs: Cody Wienk, USDI National Park Service; Amy Symstad, US Geological Survey.

Age Structure and Crossdating in the Sierra San Martir, Baja California. 1/2005 - 5/2005. University of California, Berkeley: \$10,000. Co-PI: Scott Stephens, University of California-Berkeley.

Fire and Stand History in Cheyenne Mountain Park, Colorado Springs, Colorado. 10/2003 - 11/2003. Colorado Springs Open Space: \$4,500.

Development of Tree-Ring and Fire Chronologies in Pine and Incense Cedar, Calaveras Big Trees State Park, California. 9/2003 - 8/2005. University of California-Davis: \$19,500. Co-PI: Michael Barbour, UC-Davis.

International Multiproxy Paleofire Database. 1/2003 - 5/2005. NOAA Environmental Services Data and Information Management (ESDIM) and Climate Change Data and Detection (CCDD) Programs, Rocky Mountain Research Station, and Arizona Science Foundation: \$270,000. Co-PIs: Andrea Brunell, Univ. of Utah; Eric Grimm, Illinois State Museum; Henri Grissino-Mayer, Univ. of Tennessee; Emily Heyerdahl, USDA Forest Service Rocky Mountain Research Station; Thomas Kitzberger, Univ. Nacional del Comahue Argentina; Tom Swetnam, Univ. of Arizona; Cathy Whitlock, Montana State Univ.; Connie Woodhouse, NOAA Paleoclimate Program.

Fire Regimes and Forest Structure in Forests of Utah and Eastern Nevada: Multiscale History from Tree Rings. 10/2002 - 5/2006. Rocky Mountain Research Station, Fishlake National Forest, Utah State BLM, and Joint Fire Science Program: \$750,000. Co-PIs: Emily Heyerdahl and Stan Kitchen, USDA Forest Service RMRS.

Fire and Forest Structure across Vegetation Gradients in San Juan National Forest, Colorado: A Multi-Scaled Historical Analysis. 10/2001 - 5/2005. Joint Fire Science Program and San Juan National Forest: \$315,930. Co-PI: Rosalind Wu, SJNF.

Fire History and Fire Climatology at Point Reyes National Seashore, California, From Tree Rings and Paleo-charcoal. 7/1997 - 5/2005. USDI National Park Service, Point Reyes National Seashore; \$104,600. Co-PI: Scott Anderson, Northern Arizona University.

Structure of Pre-Settlement Ponderosa Pine in the Black Hills in Support of Goshawk Habitat Management. 9/2001 - 10/2004. Black Hills National Forest: \$66,643.

Eleventh Annual North American Dendroecological Fieldweek, Universidad Antonio Narra, Saltillo, Mexico. 8/2001. Inter-American Institute: \$6,400; Lamont-Doherty Earth Observatory, Columbia Univ.: \$2,000; USFS, Rocky Mountain Research Station: \$4,000.

Chronology Development and BAI Measurements in Trees from the Sierra Santa Lucia. 11/2000 - 3/2001. California Polytechnic University, San Luis Obispo: \$3,000.

Age Structure in the Sierra San Martir, Baja California. 6/2000 - 9/2000. University of California, Berkeley, and California Polytechnic University, San Luis Obispo: \$6,000.

Chronology Development, San Bernardino Mountains Pollution Gradient. 4/2000 - 6/2000. National Health and Environmental Effects Research Laboratory, Western Ecology Division, US EPA, Corvallis, Oregon: \$2,400.

Multi-Scaled Analysis of Fire History at Jackson State Demonstration Forest, California. 6/2000 - 6/2002. California Department of Forestry and Fire Protection: \$50,110.

Fire History in the Southern Bighorn Mountains, Wyoming. 6/2000 - 5/2004. The Nature Conservancy and Bureau of Land Management: \$20,600.

Cottonwood Dating, Goat Island, Missouri River. 3/2000 - 4/2000. Cadastral Survey, Bureau of Land Management, Cheyenne, Wyoming: \$3,000.

Austral Dendroecological Fieldweek, San Martin de los Andes, Argentina. 3/2000. Inter-American Institute: \$10,000. Co-PI: Ricardo Villalba, CRICYT, Mendoza.

Historical Range of Variability Assessment and Fire History of Caribou Ranch Open Space. 11/1999 - 3/2001. Boulder County Open Space, Colorado: \$9,000. Co-PI: Alan Carpenter, Land Stewardship Consulting, Inc.

Chronology Development, Soapgrass Site, Oregon. 7/1999. National Health and Environmental Effects Research Laboratory, Western Ecology Division, US EPA, Corvallis, Oregon: \$2,000. Co-PI: Alan Solomon, EPA.

Chronology Development, Fort Sisseton and Lake Waubay Burr Oak. 5/1999, US FEMA, South Dakota: \$1,000.

Fire History in Pine Forests of The Catamount Institute, Woodland Park, Colorado. 6/1999 - 5/2001. The Catamount Institute, Inc.: \$12,500.

Recruitment and Mortality in Woodlands at the Great Plains Ecotone in Southeastern Colorado. 6/1999 - 12/2003. Colorado Natural History Small Grants Program and US Forest Service, Comanche and Kiowa-Rita Blanca National Grasslands: \$11,110.

Landscape-Scale Age Structure of Ponderosa Pine Stands on the Limestone Plateau, Black Hills National Forest. 5/1999 - 12/2000. US Forest Service, Black Hills National Forest: \$50,500.

Historical Range of Variability Assessments for the Colorado Portion of the Southern Rocky Mountain Province. 1/1999 - 12/2003. US Forest Service Rocky Mountain Region 2: \$123,800. Co-PI: Tom Veblen, University of Colorado, Boulder.

Temperature Variability since AD 1000 in the Western US from Tree Rings. 9/1998 - 8/2001. National Science Foundation, Division of Atmospheric Sciences: \$278,187. Co-PIs: Malcolm Hughes, University of Arizona; Connie Woodhouse, NOAA.

Ninth Annual North American Dendroecological Fieldweek, Mountain Research Station, Colorado. 7/1998. National Science Foundation, Long-term Ecological Research Program, Institute of Arctic and Alpine Research, University of Colorado, Boulder: \$2,000.

Expanded and Lengthened Dendroclimatic Reconstructions of Great Plains Drought. 4/1998 - 3/2001. National Science Foundation, Division of Atmospheric Sciences: \$261,096. Co-PI: Connie Woodhouse, NOAA.

Forest Management Plan for City of Boulder Open Space and Mountain Parks. 11/1997 - 10/1998. City of Boulder, Colorado: \$41,233. Co-PI: Alan Carpenter, Land Stewardship Consulting, Inc.

Tree-Ring Evidence of Past Climate and Maximum Tree Age Structure at the Glacier Lakes Ecosystems Experimental Site, Wyoming. 8/1997 - 5/2000. Rocky Mountain Research Station: \$10,000.

Eighth Annual North American Dendroecological Fieldweek, H. J. Andrews Experimental Forest, Oregon. 9/1997. Lamont-Doherty Earth Observatory, Columbia University: \$600; Oregon State University: \$1,500.

Fire History and Tree Recruitment at Cheesman Reservoir and Manitou Experimental Forest. 9/1996 - 12/1997. Rocky Mountain Research Station: \$27,000.

Seventh Annual North American Dendroecological Fieldweek, Bartlett Experimental Forest, New Hampshire. 8/1996. New Hampshire Nature Conservancy: \$500; Lamont-Doherty Earth Observatory, Columbia Univ.: \$400; US Forest Service, Northeast Forest Experiment Station: \$800; University of Arizona Laboratory of Tree-Ring Research: \$400. Co-PI: Paul Krusic, Columbia University.

Fire History in Ponderosa Pine Communities of Research Natural Areas in Central and Western Colorado and Wyoming. 7/1996 - 7/1997. Rocky Mountain Forest and Range Experiment Station: \$15,500.

Patterns of Cohort Distribution and Gap Dynamics in Old-Growth Ponderosa Pine Stands of the Southern Front Range. 8/1995 - 7/1996. Rocky Mountain Forest and Range Experiment Station: \$10,000.

Fire History in Lower and Mid-Elevation Forests of the Front Range of Colorado. 7/1995 - 12/1996. Rocky Mountain Forest and Range Experiment Station: \$10,000.

Sixth Annual North American Dendroecological Fieldweek, Kananaskis Field Station, Alberta, Canada. 6/1995. University of Arizona Laboratory of Tree-Ring Research: \$2,000; US EPA: \$2,000; Lamont-Doherty Earth Observatory, Columbia University: \$1,000; University of Arkansas, Department of Geography: \$1,000; University of New Hampshire: \$1,000. Co-PI: Paul Krusic, University of New Hampshire.

Fire History in Mixed Conifer Forests of the Sacramento Mountains, Lincoln National Forest, New Mexico. 6/1995 - 12/1996. Rocky Mountain Forest and Range Experiment Station: \$6,450.

Feasibility Study for Fire History on the North Dakota Badlands. 6/1995 - 12/1995. Theodore Roosevelt National Park Nature and History Association: \$5,000.

Tree-Ring Evidence of Past Climate at Fraser Experimental Forest, Central Colorado. 10/1994 - 9/1995. US Forest Service, Interior West Global Change Program: \$25,000. Co-PI: Rocky Mtn Forest and Range Experiment Station.

Fire History of the Black Hills, South Dakota. 10/1993 - 12/1997. National Park Service, Black Hills National Forest and Rocky Mountain Forest and Range Experiment Station, Rapid City, SD: \$70,400.

Coordination and Facilitation of Dendrochronological Research Related to the Effects of Water Diversion on Tree Growth and Growth Patterns of Old-Growth Trees. 8/1993-9/1995. Rocky Mtn Forest & Ran. Exp. Sta.: \$34,000.

Fourth Annual North American Dendroecological Fieldweek, Mountain Lake Biological Station, Virginia. 6/1993. US Forest Service, Interior West Global Change Program: \$8,000.

Third Annual North American Dendroecological Fieldweek, Mountain Research Station, University of Colorado. 8/1992. Interior West Global Change Program: \$8,000.

Fire History in Coast Redwood Forests. 8/1988 - 9/1989. National Park Service, Redwood National Park: \$4,200. Co-PI: Tom Swetnam, University of Arizona.