

CURRICULUM VITAE

John J. Battles

University of California, Berkeley
Department of Environmental Science, Policy, and Management
130 Mulford Hall MC 3114
Berkeley, CA 94720-3114
jbattles@berkeley.edu

EDUCATION

Cornell University:
Ph.D. in forest science, May 1994.

Yale University:
B.S. in biology, May 1985.
Graduated summa cum laude with distinction in the major.

PROFESSIONAL EXPERIENCE

Professor of forest ecology, Department of Environmental Science, Policy, and Management,
UC Berkeley, July 2009 to present.

Chair, Ecosystem Science Division, Department of Environmental Science, Policy, and
Management, UC Berkeley, July 2010 to June 2014.

Co-Director, Center for Forestry, College of Natural Resources, UC Berkeley,
December 2000 to June 2010.

Associate/Assistant professor of forest ecology, Department of Environmental Science, Policy,
and Management, UC Berkeley, January 1995 to June 2009.

Postdoctoral research associate, Department of Natural Resources, Cornell University,
January 1994 to December 1994.

Research staff scientist, University of Pennsylvania, May 1986 to August 1988.

HONORS AND AWARDS

Departmental Award for Student Mentoring (voted by students) -- 2013
Departmental Award for Undergraduate Teaching Excellence -- 2004
Hellman Faculty Fellow -- 1998

SERVICE TO SCHOLARLY, PUBLIC, AND GOVERNMENTAL ORGANIZATIONS

Co-chair, Science Advisory Panel, California Forest Management Task Force
(<https://fntf.fire.ca.gov/>).

Technical Advisory Group, New York State Forest Carbon Assessment ([NY Carbon](#)).

Co-chair of the Committee of Scientists for the Hubbard Brook Ecosystem Study
(<http://www.hubbardbrook.org/>).

PEER-REVIEWED PUBLICATIONS

(ResearcherID: G-8233-2012; ORCID: <http://orcid.org/0000-0001-7124-7893>)

In review

Dudney, J., C. Willing, A. Das, A. Latimer, and J. Nesmith, and **J. Battles**. In review. Climate change asymmetrically shifts infectious tree disease. *Nature Communications*.

Cleavitt, N.L., **J.J. Battles**, T.J. Fahey, and N.S. van Doorn. In review. Disruption of the competitive balance between foundational tree species by interacting stressors in a temperate deciduous forest. *Journal of Ecology*.

Knight, C.A. M. Baskaran, M. J. Bunting, M. Champagne, M. D. Potts, D. Wahl, J. Wanket, and **J. J. Battles**. In revision. Linking modern pollen accumulation rates to biomass: Quantitative vegetation reconstruction in the western Klamath Mountains. *The Holocene*.

In press

York, R.A., H. Noble, L. Quinn-Davidson, and **J.J. Battles**. In press. Pyrosilviculture: Combining prescribed fire with gap-based silviculture in mixed conifer forests of the Sierra Nevada. *Canadian Journal of Forest Research*.

Levine, J. P. de Valpine and **J.J. Battles**. In press. Generalized additive models reveal stand-level heterogeneity in live tree biomass equations. *Canadian Journal of Forest Research*.

Cowles, J. et al. In press. Ecosystem trajectories, resilience, and the state of our future earth: Insight from the U.S. LTER Network. *Ecosphere*. (Note: 1 of 6 leads; total 21 co-authors).

Last ten years

Dudney, J.C., J.C.B. Nesmith, M.C. Cahill, J.E. Cribbs, D.M. Duriscoe, A.J. Das, N.L. Stephenson, and **J.J. Battles**. 2020. Interacting effects of white pine blister rust, mountain pine beetle, and fire threaten four white pine species. *Ecosphere*: Article e03263.

Knight, C.A, C.V. Cogbill, M. D. Potts, J. A. Wanket, and **J. J. Battles**. 2020. Settlement-era forest structure and composition in the Klamath Mountains: Reconstructing a historical baseline. *Ecosphere*: Article e03250

Foster, D. E., **J.J. Battles**, B.M. Collins, R.A. York, and S.L. Stephens. 2020. Potential wildfire and carbon stability in frequent-fire forests in the Sierra Nevada: Tradeoffs from a long-term study. *Ecosphere*: Article e03198.

Tubbesing, C., R.A. York, S.L. Stephens, and **J.J. Battles**. 2020. Rethinking fire-adapted species in an altered fire regime. *Ecosphere*: Article e03091.

O'Hara, K.O. and **J. J. Battles**. 2020. Variation in leaf area index in complex mixed-conifer forests in California's Sierra Nevada: implications for stocking control. *Forests*.

Kattge, J, G. Bönisch, S. Díaz et al. 2020. TRY plant trait database – enhanced coverage and open access. *Global Change Biology* 26: 119– 188. <https://doi.org/10.1111/gcb.14904>.

Tubbesing, C.L., J.D. Lara, **J. J. Battles**, P. W. Tittman, and D. M. Kammen. 2019. Characterization of the woody biomass feedstock potential resulting from California's drought. *Scientific Reports* 10: 1096.

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*: e0196.

Saska, P. C., R. C. Bales, C. L. Tague, **J. J. Battles**, B.W. Tobin and M. H. Conklin. 2019. Fuels treatment and wildfire effects on runoff from Sierra Nevada mixed-conifer forests. *Ecohydrology*; p.e2151.

Wason, J.W., C.M. Beier, **J.J. Battles** and M. Dovciak. 2019. Acidic deposition and climate warming as drivers of tree growth in high-elevation spruce-fir forests of the Northeastern US. *Frontiers in Forests and Global Change* 2:63.

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.

Battles, J.J., N.L. Cleavitt, C.E. Johnson and T.J. Fahey. 2019. Reply to the comment by Bailey et al. on “Long-term decline of sugar maple following forest harvest, Hubbard Brook Experimental Forest, New Hampshire”. *Canadian Journal of Forest Research* 49: 1-2.

Tubbesing, C., 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.

Dudney, J., R.J. Hobbs, R. Heilmayr, **J.J. Battles**, and K.N. Suding. 2018. Navigating novelty and risk in resilience management. *Trends in Ecology & Evolution* 33: 863-873.

Jen, C., Y. Liang, Yutong. L. Hatch, N. Kreisberg, C. Stamatis, K. Kristensen, Kasper, **J. Battles**, S. Stephens, R. York, K. Barsanti, and A. Goldstein. 2018. High hydroquinone emissions from burning manzanita. *Environmental Science and Technology Letters* 5: 309-314.

Valipour. M., C.T. Driscoll, C. E Johnson, **J. J Battles**, J. L Campbell, and T. J Fahey. 2018. The application of an integrated biogeochemical model to simulate dynamics of vegetation,

hydrology and nutrients in soil and streamwater following a whole-tree harvest of a northern hardwood forest. *Science of the Total Environment* 645: 244-256.

Roman, L., H. Pearsall, T. Eisenman, T. Conway, R. Fahey, S. Landry, J. Vogt, N. van Doorn, J. M. Grove, D. Locke, A. Bardekjian, **J. Battles**, M. Cadenasso, C. Konijnendijk van den Bosch, M. L. Avolio, A. Berland, D. Jenerette, S. Mincey, D. Pataki, and C. Staudhammer. 2018. Human and biophysical legacies shape contemporary urban forests: A literature synthesis. *Urban Forestry & Urban Greening* 31: 157-168.

Cleavitt, N.L. **J.J. Battles**, C.E. Johnson, and T.J. Fahey. 2018. Long-term decline of sugar maple following whole-tree harvest, Hubbard Brook Experimental Forest, New Hampshire. *Canadian Journal of Forest Research*: 48: 23-31.

Battles, J.J., N.L. Cleavitt, D.S. Saah, Benjamin T. Poling, and T.J. Fahey. 2017. Ecological impact of a microburst windstorm in a northern hardwood forest. *Canadian Journal of Forest Research* 47:

Saska, P. C, M. H. Conklin, **J. J. Battles**, C. L. Tague, and R. C. Bales. 2017. Forest thinning impacts on the water balance of Sierra Nevada mixed conifer headwater basins. *Water Resources Research*: 53: 5364-5381.

McLauchlan, K., L. Gerhart, **J. Battles**, J. Craine, A. Elmore, P. Higuera, M. Mack, B. McNeil, D. Nelson, N. Pederson, and S. Perakis. 2017. Centennial-scale reductions in nitrogen availability in temperate forests of the United States. *Scientific Reports* 7.

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.

Wason J.W., M. Dovciak, C.M. Beier, and **J.J. Battles**. 2017. Lack of range shifts despite tree growth responses to recent changes in climate and acidic deposition. *Journal of Applied Ecology*. doi:10.1111/1365-2664.12899

Levine, C. R., F. Krivak-Tetley, N. S. van Doorn, J. S. Ansley, and **J.J. Battles**. 2016. Long-term demographic trends in a fire-suppressed mixed-conifer forest. *Canadian Journal of Forest Research* 46: 745-752.

Su, Y, Q. Guo, D. L. Fry, B. M. Collins, N.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, DOI: 10.1080/07038992.2016.1131114.

Fahey, T.J., A. K. Heinz, **J.J. Battles**, M. C. Fisk, C.T. Driscoll, J. D. Blum, and C. Johnson. 2015. Root biomass declined in response to restoration of soil calcium in a northern hardwood forest. *Canadian Journal of Forest Research* 46:738-744.

Shao, S., C.T. Driscoll, C.E. Johnson, T.J. Fahey, **J.J. Battles** and J.D. Blum. 2015. Long-term responses in soil solution and streamwater chemistry at Hubbard Brook after experimental addition of wollastonite. *Environmental Chemistry*, <http://dx.doi.org/10.1071/EN15113>.

- Glassman, S.I., C. R. Levine, A.M. DiRocco, **J. J. Battles** and T. D. Bruns. 2015. Ectomycorrhizal fungal spore bank recovery after a severe forest fire: Some like it hot. *The ISME Journal*: doi: 10.1038.
- Tempel, D.J., R. J. Gutiérrez, **J. J. Battles**, D. L. Fry, Yanjun Su, Qinghua 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. Modeling short- and long-term impacts of fuels treatments and wildfire on an old-forest species. *Ecosphere* 6:1-18.
- Eitzel, M., **J.J. Battles**, R.A. York, and P. de Valpine. 2015. Can't see the trees for the forest: complex factors influence survival in a temperate second-growth forest. *Ecosphere* 6:1-17.
- Jones, D., K.O. O'Hara, **J.J. Battles**, and R. Gersonde. 2015. Alternative procedures for leaf area estimation in Sierra Nevada conifer trees. *Forests* 6: 2631-2654.
- Falster, D.S. et al. 2015. BAAD: a biomass and allometry database for woody plants. *Ecology* 96: 1445. (Note: I am one of 96 contributors to this peer-reviewed database project.)
- Cousins, Stella, J.M., **J.J. Battles**, J.E. Sanders, and R.A. York. 2015. Decay patterns and carbon density of standing dead trees in California Mixed Conifer Forests. *Forest Ecology and Management* 353: 136-147.
- 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.
- Fahey, T.J., K. S. Kassam, P.H. Templer, B. T. Anderson, A. R. Fusco, **J. J. Battles**, J. L. Campbell, L. Rustad, C. T. Driscoll Jr., M. B. Green, N. L. Rodenhouse, P. G. Schaberg, M. A. Vadeboncoeur. 2015. The promise and peril of intensive-site-based ecological research: Insights from the Hubbard Brook Ecosystem Study. *Ecology*: 96:885-901.
- Dufour, S., M.K. Hayden, J. C. Stella, H. Piégay and **J. J. Battles**. 2014. Maintaining channel abandonment processes increases riparian plant diversity within fluvial corridors. *Ecology* 8:780–791.
- 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: 1870-1886.
- Cleavitt, N.L., **J.J. Battles** T.J. Fahey, and J.L. Blum. 2014. Determinants of survival over seven years for a natural cohort of sugar maple seedlings in a northern hardwood forest. *Canadian Journal of Forest Research* 44:1112-1121.
- Johnson, C.E., C.T. Driscoll, J.D. Blum, T.J. Fahey and **J.J. Battles**. 2014. Soil chemical dynamics after calcium silicate addition to a northern hardwood forest. *Soil Science Society of America Journal* 78:1458-1468.

Eschtruth, A.K. and **J.J. Battles**. 2014. Ephemeral disturbances have long lasting impacts on forest invasion dynamics. *Ecology* 95:1770-1779.

Roman, L.A., **J.J. Battles**, and J.R. McBride. 2014. Determinants of establishment survival for residential trees in Sacramento County, CA. *Landscape & Urban Planning* 129: 22-31.

Lydersen, J.M., B. M. Collins, C.B. Dow, P. Gonzalez, C. M. Ewell, D. S. Saah, A.L. Reiner, J. Fites 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.

McLauchlan, K.K., P. E. Higuera, D. G. Gavin, S. S. Perakis, M. C. Mack, H. Alexander, **J. Battles**, F. Biondi, B. Buma, D. Colombaroli, S. Enders, D. R. Engstrom, F. S. Hu, J. R. Marlon, J. Marshall, M. McGlone, J. L. Morris, L. E. Nave, B. N. Shuman, E. Smithwick, D. H. Urrego, D. A. Wardle, C. J. Williams, J. J. Williams. 2014. Reconstructing disturbances and their biogeochemical consequences over multiple timescales. *BioScience* 64:105-116.

Battles, J.J., T.J. Fahey, C.T. Driscoll, J.D. Blum, and C. E. Johnson. 2014. Restoring soil calcium reverses forest decline. *Environmental Science and Technology Letters* 1: 15-19.

Roman, L.A., **J.J. Battles**, and J.R. McBride. 2013. The balance of planting and mortality in a street tree population. *Urban Ecosystems*. DOI 10.1007/s11252-013-0320-5.

Eitzel, M., **J.J. Battles**, R.A. York, J. Knape, and P. de Valpine. 2013. Estimating tree growth models from complex forest monitoring data. *Ecological Applications* 23: 1288-1296.

ERRATUM. 2016. Estimating tree growth from complex forest monitoring data (vol 23, pg 1288, 2013). *Ecological Applications* 26: 1943-1945.

Eschtruth, A. K., R.A. Evans, and **J.J. Battles**. 2013. Patterns and predictors of survival in *Tsuga canadensis* populations infested by the exotic pest *Adelges tsugae*: 20 years of monitoring. *Forest Ecology and Management* 305: 195-203.

Green, M.B., A.S. Bailey, S.W. Bailey, **J. J. Battles**, J. L. Campbell, C. T. Driscoll, T.J. Fahey, L. Lepine, G.E. Likens, S.V. Ollinger, and P.G. Schaberg. 2013. Decreased water flowing from a forest amended with calcium silicate. *Proceedings of the National Academy of Science* 110: 5999–6003.

York, R.A., O'Hara, K.L. & **Battles, J.J.** 2013. Density effects on giant sequoia (*Sequoiadendron giganteum*) growth through 22 years: Implications for restoration and plantation management. *Western Journal of Applied Forestry* 28:483-495.

Sherman, R.E., T.J. Fahey, P.H. Martin, and **J.J. Battles**. 2012. Patterns of growth, recruitment, mortality and biomass across an altitudinal gradient in a neotropical montane forest, Dominican Republic. *Journal of Tropical Ecology* 28:483-495.

Qi Chen, G. V. Laurin, **J. J. Battles**, and D.S. Saah. 2012. Integration of airborne lidar and vegetation types derived from aerial photography for mapping aboveground live biomass. *Remote Sensing of the Environment* 121:108-117.

York, R.A., **J.J. Battles**, R.C. Wenk, and D.S. Saah. 2012. A gap-based approach for regenerating pine species and reducing surface fuels in multiaged mixed conifer stands in the Sierra Nevada, California. *Forestry* 85:203-213.

van Mantgem, P.J., N.L. Stephenson, E. Knapp, **J.J. Battles** and J.E. Keeley. 2011. Long-term effects of prescribed fire on mixed conifer forest structure in the Sierra Nevada, California. *Forest Ecology and Management* 261: 989-994.

van Doorn, N. S., **J.J. Battles**, T.J. Fahey, T.G. Siccama, and P.A. Schwarz. 2011. Links between biomass and tree demography in a northern hardwood forest: A decade of stability and change in Hubbard Brook Valley, New Hampshire. *Canadian Journal of Forest Research* 41: w1369-1379.

Eschtruth, A. K. and **J. J. Battles**. 2011. The importance of quantifying propagule pressure to understand invasion: an examination of riparian forest invasibility. *Ecology* 92:1314-1322.

Obrist, D., D. W. Johnson, S. E. Lindberg, Y. Luo, O. Hararuk, R. Bracho, **J. J. Battles**, D. B. Dail, R. L. Edmonds, R. K. Monson, S. V. Ollinger, S. G. Pallardy, K. S. Pregitzer, and D. E. Todd. 2011. Mercury Distribution Across 14 US Forests. Part I: Spatial Patterns of Concentrations in Biomass, Litter, and Soils. *Environmental Science & Technology* 45:3974-3981.

Collins, B. M., S. L. Stephens, G. B. Roller, and **J. J. Battles**. 2011. Simulating fire and forest dynamics for a landscape fuel treatment project in the Sierra Nevada. *Forest Science* 57:77-88.

Das, A., **J. Battles**, N. L. Stephenson, and P. J. van Mantgem. 2011. The contribution of competition to tree mortality in old-growth coniferous forests. *Forest Ecology and Management* 261:1203-1213.

Stella, J., M. Hayden, **J. Battles**, H. Piegay, S. Dufour, and A. K. Fremier. 2011. The Role of Abandoned Channels as Refugia for Sustaining Pioneer Riparian Forest Ecosystems. *Ecosystems* 14:776-790.

Cleavitt, N.L., T.J. Fahey, and **J.J. Battles**. 2011. Regeneration ecology of sugar maple (*Acer saccharum*): seedling survival in relation to nutrition, site factors, and damage by insects and pathogens. *Canadian Journal of Forest Research*. 41: 235–244.

York, R.A., **J. J. Battles**, A.K. Eschtruth, and F. G. Schurr. 2011. Giant sequoia (*Sequoiadendron giganteum*) regeneration in experimental canopy gaps. *Restoration Ecology* 19:14-23.

REPORTS, BOOK CHAPTERS AND PUBLIC OUTREACH (last five years)

van Doorn, N.S., L.A. Roman, et al. 2020. Urban tree monitoring: a resource guide. General Technical Report PSW-GTR-266. UDA Forest Service. (1 of 19 co-authors).

Roman, L.A, van Doorn N.S., et al. 2020. Urban tree monitoring: a field guide. General Technical Report NRS-GTR-194. UDA Forest Service. (1 of 17 co-authors).

McCann, H., V. Butsic, **J. Battles**, R. Cisneros, Y. Jin, S. Kocher, M. Potts, and S. Stephens. 2020. The Benefits of Headwater Forest Management. Public Policy Institute of California ([Link to report](#)).

Axelsson, J., **J.J. Battles**, and 23 others. 2019. The California Tree Mortality Data Collection Network—Enhanced communication and collaboration among scientists and stakeholders. *California Agriculture* 73:55-62.

Axelsson, J., **J.J. Battles**, A. Das, and P. van Mantgem. 2019. Coming to terms with the new normal: Forest resilience and mortality in the Sierra Nevada. *Fremontia* 47: 50-56.

Ackerly, David, **John Battles**, Van Butsic, Patrick Gonzalez, Maggi Kelly, Whendee Silver, David Saah, Stefania Di Tommaso, Allegra Mayer, Diana Moanga, Isabel Schroeter, Bruce Riordan. (University of California, Berkeley). 2018. Land Acquisition and Ecosystem Carbon in Coastal California. California's Fourth Climate Change Assessment. Publication number: CCCA4-EXT-2018-003.

Dettinger, Michael, Holly Alpert, **John Battles**, Jonathan Kusel, Hugh Safford, Dorian Fougères, Clarke Knight, Lauren Miller, Sarah Sawyer. (United States Geological Survey). 2018. Sierra Nevada Summary Report. California's Fourth Climate Change Assessment. Publication number: SUM-CCCA4-2018-004.

Battles, John, David Bell, Robert Kennedy, David Saah, Brandon Collins, Robert York, John Sanders. (University of California, Berkeley). 2018. Innovations in Measuring and Managing Forest Carbon Stocks in California. California's Fourth Climate Change Assessment, California Natural Resources Agency. Publication number: CCCA4-CNRA2018-014.

Roman, L. A., **J.J. Battles**, and Joe R. McBride. 2016. Urban tree mortality: A primer of demographic approaches. US Forest Service, Northern Research Station, General Technical Report: NRS-158.

PUBLICATIONS OF UNDERGRADUATE RESEARCHERS (last five years)

(All of the publications are associated with undergraduate honors research and/or Environmental Science capstone research projects that I directly supervised.)

Sawicky, Adam. 2019. Retrospective analysis of wood decay in Sierran mixed conifer forests. Senior Honors Research.

Levine, Jacob. 2019. Improving tree-level biomass estimation using a generalized additive model for northern hardwood forests. Senior Honors Research.

Quintana Del Carpio, C. 2018. Changing aboveground carbon from fire suppression to natural

fire regime. Environmental Science Senior Capstone Research Project.
<https://nature.berkeley.edu/classes/es196/projects/index.html>

Klein, Z.M. 2018. Standing dead trees in a northeastern deciduous forest: Decay patterns and biomass impacts. Environmental Science Senior Capstone Research Project.
<https://nature.berkeley.edu/classes/es196/projects/index.html>

Kuskulis, E.K. 2017. Does it make the cut? Evaluating the efficacy of pruning to mitigate white pine blister rust infection in sugar pine. Environmental Science Senior Capstone Research/College Honors Project.
<http://nature.berkeley.edu/classes/es196/projects/2017final/index.html>.

Bertolet, B.L. 2016. Lake TEA: Changing dynamics of terrestrially-derived dissolved organic carbon across the land-water interface in Northern Wisconsin. Environmental Science Senior Capstone Research/College Honors Project.
<http://nature.berkeley.edu/classes/es196/projects/2016final/index.html>.

Fedorova, V.A. 2016. Investigating tree mortality in the American Fire footprint: Is California's current drought affecting post-fire mortality? Environmental Science Senior Capstone Research Project. <http://nature.berkeley.edu/classes/es196/projects/2016final/index.html>.

Keller, J.L. 2016. Management on carbon dynamics in California Sierra Nevada mixed conifer forests. Environmental Science Senior Capstone Research Project.
<http://nature.berkeley.edu/classes/es196/projects/2016final/index.html>.