

Brian J. Harvey

Ecosystem and Landscape Ecology Lab	(608) 265-8001 (lab)
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EDUCATION

- 2010 - 2014 **Ph.D.**, Ecosystem and Landscape Ecology Lab, Dept. of Zoology (Spatial Ecology), University of Wisconsin-Madison, Dissertation: *Causes and consequences of spatial patterns of fire severity in Northern Rocky Mountain forests: the role of disturbance interactions and changing climate*. Advisor: Monica G. Turner. (Dissertation successfully defended on December 16, 2014)
- 2007 - 2010 **M.A.**, Dept. of Geography (Geography; Resource Management and Environmental Planning), San Francisco State University, Thesis: *Post-fire vegetation change and stand dynamics in a Pinus muricata forest*. Advisors: Barbara A. Holzman, Jerry D. Davis.
- 1999 - 2003 **B.A.**, Dept. of Geography, Dept. of Environmental Studies (double major) University of California, Santa Barbara.

RESEARCH INTERESTS

Landscape ecology, disturbance ecology, fire ecology, forest ecology, biogeography, global change, vegetation succession, resource management, dendroecology, remote sensing, GIS, spatial analysis.

ACADEMIC APPOINTMENTS

- 2015 - David H. Smith Postdoctoral Fellow, University of Colorado – Boulder.
- 2010 - 2015 Graduate Teaching Assistant, University of Wisconsin – Madison (academic year).
Courses taught: General Ecology (upper division), Introductory Biology.
- 2010 - 2014 Graduate Research Assistant, University of Wisconsin – Madison (summer).
Funding: Joint Fire Science Program (2010-2012), National Park Service (2013), and Wisconsin Space Grant Consortium (2014).
- 2013 Course Coordinator, University of Wisconsin – Madison.
Courses taught: General Ecology (upper division).
- 2008 - 2010 Graduate Teaching Assistant, San Francisco State University.
Courses taught: Introductory Physical Geography, Introductory Environmental Science
- 2009 Graduate Lecturer, San Francisco State University.
Course: Introductory Physical Geography
- 2006 Substitute Teacher, Redwood City School District, Redwood City, CA.

RESEARCH GRANTS AND FELLOWSHIPS (\$201,900 total)

- 2015 - 2017 David H. Smith Conservation Research Fellowship, Society for Conservation Biology (SCB): *Managing for resistance and resilience during a period of accelerating tree mortality in Rocky Mountain subalpine forests*. (\$145,000 – postdoctoral fellow PI).
- 2014 - 2015 Wisconsin Space Grant Consortium (WSGC) Dr. Laurel Salton Clark Memorial Graduate Fellowship: *Testing for wildfire feedbacks in forests of the Northern Rocky Mountains*. (\$5,000 – graduate student PI).

- 2012 - 2013 Joint Fire Science Program (JFSP) Graduate Research Innovation (GRIN) Award: *Is spatial heterogeneity in burn severity changing with warming climate and increasing wildfire?* (\$22,400 – graduate student PI).
- 2012 - 2013 National Park Service (NPS) George Melendez Wright Climate Change Fellowship: *Wildfire burn severity patterns and forest transitions under a warming climate in national parks of the Northern Rockies.* (\$19,100 – graduate student PI).
- 2012 - 2013 National Park Service (NPS). *Using archival orthophotographs to investigate fire exclusion effects in Douglas-fir forests of Grand Teton Natl. Park* (\$10,000 – Co-PI).
- 2009 California Native Plant Society, Doc Burr Educational Grant (\$400 – graduate student PI).

ACADEMIC HONORS AND AWARDS (\$11,250 total)

- 2012 - Phi Kappa Phi National Honor Society.
- 2015 Campus-Wide Capstone Ph.D. Teaching Award, UW-Madison (\$500).
- 2014 Conference Travel, UW-Madison Graduate School Vilas Award (\$600).
- 2014 Travel Scholarship Award, 12th Biennial Yellowstone Scientific Conference (\$450).
- 2014 Meyer Research Fund Award, Dept. of Zoology, UW-Madison (\$1,500).
- 2014 Best Graduate Student Poster Award, 25th Annual Wisconsin Space Conference.
- 2014 Travel, Research, and Educational Experience (TREE) Grant, Association for Fire Ecology and the Joint Fire Sciences Program (\$1,500).
- 2010 - 2014 John Jefferson Davis Travel Award, Dept. of Zoology, UW-Madison (6 awards totaling \$2,800).
- 2010 Hood Recipient on behalf of all Graduate Students in the College, Coll. of B.S.S., SFSU.
- 2010 Graduate Student Distinguished Achievement Award for Academic Excellence, Dept. of Geography, SFSU.
- 2009 - 2010 Professional Travel Funding, Dept. of Geography, SFSU (2 awards totaling \$550).
- 2009 Pease Memorial Award for Excellence in Geographic Study, Dept. of Geography, SFSU (\$600).
- 2009 Professional Travel Funding, Coll. of B.S.S., SFSU (\$250).
- 2008 - 2009 Rod Heller Memorial Scholarship Fund for Environmental Education Award (2 awards totaling \$2,500).

PUBLICATIONS

Published or in press

- Harvey, B.J.**, Donato, D.C., Turner, M.G. 2014. Recent mountain pine beetle outbreaks, wildfire severity, and postfire tree regeneration in the US Northern Rockies. *Proceedings of the National Academy of Sciences* 111(42): 15120-15125.
- Harvey, B.J.**, Donato, D.C., Romme, W.H., Turner, M.G. 2014. Fire severity and tree regeneration following bark beetle outbreaks: the role of outbreak stage and burning conditions. *Ecological Applications* 24(7): 1608-1625.
- Harvey, B.J.**, Forrester, A.B., Holzman, B.A. 2014. Forest resilience following severe wildfire in a semi-urban National Park. *Fremontia* 42(3): 14-18.
- Harvey, B.J.**, Holzman, B.A. 2014. Divergent successional pathways of stand development following fire in a California closed-cone pine forest. *Journal of Vegetation Science* 25(1): 88-99.

- Harvey, B.J.**, Donato, D.C., Romme, W.H., Turner, M.G. 2013. Influence of recent bark beetle outbreak on fire severity and post-fire tree regeneration in montane Douglas-fir forests. *Ecology* 94(11): 2475-2486.
- Donato, D.C., Simard, M., Romme, W.H., **Harvey, B.J.**, Turner, M.G. 2013. Evaluating post-outbreak management effects on future fuel profiles and stand structure in bark beetle-impacted forests of Greater Yellowstone. *Forest Ecology and Management* 303: 160-174.
- Donato, D.C., **Harvey, B.J.**, Romme, W.H., Simard, M., Turner, M.G. 2013. Bark beetle effects on fuel profiles across a range of stand structures in Douglas-fir forests of Greater Yellowstone, USA. *Ecological Applications* 23(1): 3-20.
- Harvey, B.J.**, Holzman, B.A., Davis, J.D. 2011. Spatial variability in stand structure and density-dependent mortality in newly established post-fire stands of a California closed-cone pine forest. *Forest Ecology and Management* 262(11): 2042-2051.
- In preparation (lead author only)*
- Harvey, B.J.**, Donato, D.C., Turner, M.G. In prep. Post-fire tree regeneration varies with burn patch size and post-fire drought in subalpine conifer forests.
- Harvey, B.J.** In prep. Is the spatial heterogeneity of burn severity changing with warming climate and increasing wildfire?
- Harvey, B.J.** In prep. Variability in relationships among different field measures of burn severity and common satellite indices.

PUBLISHED TECHNICAL REPORTS

- Harvey, B.J.** 2015. Testing for wildfire feedbacks in forests of the US Northern Rockies. Report to the Wisconsin Space Grant Consortium.
- Turner, M.G., Romme, W.H., Townsend, P.A., Renkin, R.A., Donato, D.C., Simard, M., **Harvey, B.J.**, Griffin, J.M. 2013. Bark beetles, fuels, and future fire hazard in contrasting conifer forests of Greater Yellowstone. Final report to the Joint Fire Science Program, project no. 09-1-06-3.
- Harvey, B.J.**, Turner, M.G. 2013. Is spatial heterogeneity of burn severity changing with warming climate and increasing wildfire? Final report to the Joint Fire Science Program, project no. 12-3-01-3.
- Donato, D.C., Abendroth, D., **Harvey, B.J.** 2013. Using archival digital orthophotographs to investigate the effects of fire exclusion and insect outbreaks on Douglas-fir in Grand Teton National Park and surrounding areas. Final report to the U.S. National Park Service, project no. GRTE 00291.
- Abendroth, D., Donato, D.C., **Harvey, B.J.**, Mellander, K. 2013. Using archival digital orthophotographs to investigate the Douglas-fir fire regime: A preliminary study from Grand Teton National Park and the Bridger-Teton National Forest, Wyoming. White paper submitted to the U.S. National Park Service.
- Davis, A., Davis, J.D., **Harvey, B.J.** 2010. Pedro Point Headlands 1941 to 2010: A preliminary study using historical remote sensing and dendrochronology. Final report to the Pacifica Land Trust and the California Coastal Conservancy.
- Harvey, B.J.**, Brastow, P. 2010. Weeds of San Francisco: Preliminary mapping and assessment report for Weed Management Area strategic planning. Final report to the California Department of Food and Agriculture.
- Augembaugh, K., **Harvey, B.J.**, Hayes, J., Kernan, J., Marion, D.A., Peterson, J., Pipkin, A., Riley, K., Kaye, M. 2009. Fire on the mountain: recent fire history of the Tekoa Mountain Wildlife

Management Area, MA. in: Speer, J. H. (ed.) *19th Annual North American Dendroecological Fieldweek (NADEF) Final Report*. pp. 39-47.

PRESENTATIONS AT PROFESSIONAL MEETINGS (presenting author only)

- Harvey, B.J.**, Donato, D.C., Simard, M., Griffin, J.M., Romme, W.H., Turner, M.G., 2014. Disturbances across boundaries: Forest structure, wildfire severity, and postfire resilience following recent bark beetle outbreaks in Greater Yellowstone. *12th Biennial Scientific Conference on the Greater Yellowstone Ecosystem*, Mammoth Hot Springs, Yellowstone National Park. Oral presentation.
- Harvey, B.J.**, Donato, D.C., Turner, M.G., 2014. Landscape patterns and disturbance legacies: Is a warming climate altering spatial patterns of wildfire severity and post-fire forest succession? *Annual Meeting, Ecological Society of America*, Sacramento, CA. Invited oral presentation in special session on “Climate Warming, Changing Disturbance Regimes, and Forest Resilience.”
- Harvey, B.J.**, 2014. Burn me twice, shame on who? Testing for wildfire feedbacks in forests of the US Northern Rocky Mountains. *24th Annual Wisconsin Space Conference*, Fitchburg, WI. Poster presentation.
- Harvey, B.J.**, Donato, D.C., Turner, M.G., 2014. Post-fire subalpine forest regeneration varies with climate in patches of stand-replacing wildfire. *Large Wildland Fires Conference: Social, Political, and Ecological Effects*, Missoula, MT. Invited oral presentation in special session on “Social-Ecological Study of Western Fires: Developing and Integrated Framework for Research in Times of Change.”
- Harvey, B.J.**, Donato, D.C., Turner, M.G., 2014. Are spatial patterns of burn severity changing with warming climate and increasing wildfire? *Large Wildland Fires Conference: Social, Political, and Ecological Effects*, Missoula, MT. Oral presentation.
- Harvey, B.J.**, Donato, D.C., Romme, W.H., Turner, M.G., 2013. Field evidence of recent bark beetle outbreaks affecting fire severity in subalpine forests: the importance of time since outbreak and burning conditions. *Annual Meeting, Ecological Society of America*, Minneapolis, MN. Oral presentation.
- Harvey, B.J.**, Turner, M.G., Donato, D.C. 2012. Spatial heterogeneity of burn severity in Northern Rocky Mountain forests (USA) between 1984 and 2011. *International Fire Ecology and Management Congress*, Portland, OR. Invited oral presentation in special session on “Assessing fire effects with remote sensing and geospatial technologies.”
- Harvey, B.J.**, Turner, M.G., Romme, W.H., Donato, D.C. 2012. Douglas-fir beetle impacts on fire severity and postfire tree regeneration in lower montane forests of Greater Yellowstone. *Annual Meeting, Ecological Society of America*, Portland, OR. Oral presentation.
- Harvey, B.J.**, Turner, M.G., Romme, W.H., Donato, D.C., Simard, M., Townsend, P.A. 2011. Effects of recent mountain pine beetle infestation on fire severity and post-fire regeneration in a lodgepole pine forest of Greater Yellowstone. Paper session: Disturbance II: *Annual Symposium, U.S. International Association for Landscape Ecology*, Portland, OR. Oral presentation.
- Harvey, B.J.**, Holzman, B.A. 2010. Post-fire stand dynamics in a *Pinus muricata* forest (1995-2009). Paper Session: Biogeography Specialty Group Masters and Undergraduate Student Paper Competition. *Annual Meeting, Association of American Geographers*, Washington, D.C. Oral presentation.
- Crowley, B.J., **Harvey, B.J.**, Holzman, B.A. 2009. Dynamics of pitch canker disease in bishop pines (*Pinus muricata*) at Point Reyes National Seashore, CA. *Annual Meeting, Association of American Geographers*, Las Vegas, NV. Poster presentation.

OUTREACH ACTIVITIES, DEPARTMENTAL SEMINARS, AND GUEST LECTURES

Outreach activities

- 2014 East High School, Madison, WI. Mathematics of Planet Earth: Math Week: *Drought, wildfires, and beetle outbreaks: Studying forests during a period of rapid change.*
- 2014 East High School, Madison, WI. A.P. Environmental Science Class: *Forest health, disturbance, and climate change.*
- 2013 National Park Service Webinar Series: Climate Change in America’s National Parks: *Research from the Next Generation: George Melendez Wright Climate Change Fellowship Science in Parks.*
- 2013 East High School, Madison, WI. Mathematics of Planet Earth: Math Week: *Wildfires, bark beetles, and forests: Disturbance ecology in the Rocky Mountains.*
- 2012 Sun Prairie High School, Sun Prairie, WI. *Climate change: separating science and politics.*

Departmental seminars

- 2013 University of Wisconsin – Madison, Chaos and Complex Systems Seminar Series: *Climate change, disturbance, and forest resilience.*

Invited Guest lectures

- 2014 Humboldt State University, Geography 357: Climate, Ecosystems and People: *Bark beetle outbreaks and wildfires: Mayhem in the forest or business as usual?*
- 2014 University of Wisconsin – Madison, Entomology/Botany/Zoology 473: Plant-Insect Interactions: *Ecosystem response to herbivore-induced disturbance.*
- 2013 University of Wisconsin – Madison, Botany/Zoology/Forest and Wildlife Ecology 460: General Ecology: *Landscape ecology and forest disturbance dynamics.*
- 2012 University of Colorado – Boulder, Geography 5241: Graduate Seminar in Forest Dynamics and Disturbance: *Douglas-fir beetle outbreaks, wildfire, and forest trajectories in lower montane forests of Greater Yellowstone.*
- 2012 University of Wisconsin – Madison, (2) in Botany/Zoology/Forest and Wildlife Ecology 460: General Ecology: (1) *Landscape ecology*; (2) *Landscape ecology and forest disturbance dynamics.*
- 2012 University of Wisconsin – Madison, Entomology/Botany/Zoology 473: Plant-Insect Interactions: *Herbivore-induced disturbance and regeneration dynamics.*
- 2011 University of Wisconsin – Madison, Botany/Zoology/Forest and Wildlife Ecology 460: General Ecology: *Landscape ecology and disturbance dynamics.*

UNDERGRADUATE MENTORING AND RESEARCH TRAINEES

(10 student mentees total; 6 from underrepresented groups in ecological sciences)

- 2014 – 2015 University of Wisconsin – Madison, GIS Certificate Program Capstone Project
Stephen Kochaver
- 2011 - 2014 University of Wisconsin – Madison, Introductory Biology Mentored Research Program
(Full semester, 2-credits per student)
Oseghale Ituah (2014)
Bridget Gilmore (2014)
Katelyn Budke (2013)
Sarah Winter (2013)
Kailey Burckhard (2012)

- Adam Winegarden (2012)
 Zachary Osterholz (2012)
 Stephen Kochaver (2011)
- 2013 University of Wisconsin – Madison, Biology Major Senior Capstone Project
 Stephen Kochaver
- 2012 University of Wisconsin – Madison, Independent Research Project
 Brooke Weiland
 Tom Butusov

SELECTED MEDIA COVERAGE

Bark beetle outbreaks and wildfires in western North American forests

- 2014 Don't blame the beetles. *SCIENCE* 346(6206): 154-156, by Cally Carswell ([link](#))
- 2014 Study: Bark beetles not a wildfire bugaboo. *USA TODAY*, by Doyle Rice ([link](#))
- 2014 Mountain pine beetles get a bad rap for wildfires, study says. *UNIVERSITY OF WISCONSIN-MADISON NEWS* ([link](#)) by Kelly Tyrell; *also printed in *SCIENCE DAILY* ([link](#)), *SCIENCE BLOG* ([link](#)), *ENVIRONMENTAL RESEARCH WEB* ([link](#)), *EUREKALERT* ([link](#)), *SCIENCE CODEX* ([link](#))
- 2014 Fire severity not linked to beetle kill, study finds. *WYOMING PUBLIC RADIO*, by Stephanie Joyce ([link](#))
- 2014 Bark beetles have little impact on burn severity – study. *ENERGY & ENVIRONMENT NEWS, PM*, by Phil Taylor ([link](#))
- 2014 Study: Pine beetle outbreaks not a big factor in the ecological severity of Western Wildfires. *SUMMIT COUNTY CITIZENS VOICE*, by Bob Berwyn ([link](#))

Wildfire severity patterns and tree regeneration in western North American forests

- 2014 Graduate Research Innovation Awards encourage young scientists to ask bold questions. *FIRE SCIENCE DIGEST*, by Gail Wells. ([link](#))
- 2012 Interns helping National Park Service study climate change at Lassen National Park and in Rocky Mountain Forests. *NATIONAL PARKS TRAVELER*, by staff writer. ([link](#))
- 2012 Youth engaging in climate change across the Service. *CLIMATE CHANGE RESPONSE PROGRAM NEWS*. by Tim Watkins. ([link](#))

Science Communication

- 2014 Why do you do what you do? *COMPASSBLOGS: Answering the “So what?” in science communication*, by Karen McLeod. ([link](#))
- 2014 Finding common ground on fire science. *COMPASSBLOGS: Answering the “So what?” in science communication*, by Karen McLeod. ([link](#))
- 2014 Burning down communication barriers among fire scientists. *COMPASSBLOGS: Answering the “So what?” in science communication*, by Karen McLeod. ([link](#))

ADDITIONAL RELEVANT PROFESSIONAL EXPERIENCE AND TRAINING

- 2015 Wilburforce Fellowship in Conservation Science, Greenfire Campus, Seattle, WA.
- 2015 Research Database Coordinator, Northern Rockies Fire Science Network
- 2014 NSF Research Coordination Network Workshop, *Novus II: Biogeochemical Interactions with Disturbance Events*, Rocky Mountain National Park, CO.

- 2014 COMPASS media training participant, *The Science of Fire: Advanced Communication Workshop*, Greenfire Campus, Seattle, WA.
- 2014 Structural Equation Modeling Workshop, led by Dr. James Grace (USGS), Madison, WI
- 2009 GIS Database Developer, San Francisco Weed Management Area, San Francisco, CA.
- 2009 Fire History Sub-Group, 19th Annual North American Dendroecological Fieldweek, Hampshire College, MA.
- 2006 - 2008 Staff Environmental Scientist, Ninyo and Moore Environmental and Geotechnical Consultants, Oakland, CA.
- 2006 Project Manager – Resource Optimization, SkyWest Airlines, San Francisco, CA.
- 2003 GIS Technician (Intern), Santa Barbara County Surveyors Office, Santa Barbara, CA.
- 2001 Canadian Corridor Wolf Recovery Project (Operated by SFSU College of Extended Learning), Kalispell, MT.

PROFESSIONAL AND DEPARTMENTAL SERVICE

Manuscript reviewer for: *Ecology, Journal of Applied Ecology, Journal of Vegetation Science, Forest Ecology and Management, Plant Ecology, PLOS ONE, EcoScience, Forests, Scandinavian Journal of Forest Research, Canadian Geographer, Oecologia, Physical Geography, Geografiska Annaler (Series A, Physical Geography)*.

Grant review panelist, Joint Fire Science Program – Graduate Research Innovation Award (2014)

President and Founder, University of Wisconsin Chapter, Student Association for Fire Ecology (2013-present)

President, Graduate Student Organization, Dept. of Zoology, University of Wisconsin (2013-2014)

Graduate student representative, Ecology Course Coordinator Hiring Committee, Dept. of Botany, University of Wisconsin (2013)

Representative, Graduate Student Organization, Dept. of Zoology, University of Wisconsin (2010-2013)

PROFESSIONAL MEMBERSHIPS

The Association of American Geographers (AAG) – Biogeography Specialty Group

Ecological Society of America (ESA)

Society for Conservation Biology (SCB)

U.S. International Association for Landscape Ecology (US-IALE)

Society of American Foresters (SAF)

Association for Fire Ecology (AFE)

California Native Plant Society (CNPS)

REFERENCES

PhD Advisor

Monica G. Turner
Eugene P. Odum Professor of Ecology
Department of Zoology
University of Wisconsin – Madison
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Research Collaborator

William H. Romme
Professor Emeritus
Warner College of Natural Resources
Colorado State University
Fort Collins, CO 80523
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PhD Committee Member and Teaching Supervisor

Ellen I. Damschen
Assistant Professor
Department of Zoology
University of Wisconsin – Madison
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PhD Committee Member and Research Collaborator

Kenneth F. Raffa
Beers-Bascom Professor of Conservation
Department of Entomology
University of Wisconsin – Madison
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Research Collaborator

Daniel C. Donato
Natural Resource Scientist
Washington State Department of Natural Resources
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