

## MICHELLE C. AGNE

### Curriculum vitae

USDA Forest Service  
Pacific Northwest Research Station  
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### EDUCATION

- 2017 – 2022 **Ph.D.**, Forest Ecology, School of Environmental and Forest Sciences, University of Washington, GPA: 4.00
- 2017 – 2022 **Ph.D.**, Environmental and Conservation Sciences, School of Veterinary and Life Sciences, Murdoch University
- 2011 – 2013 **M.S.**, Sustainable Forest Management, Department of Forest Engineering, Resources, and Management, Oregon State University, GPA: 3.97
- 2005 – 2009 **B.S.**, Environmental Science (Terrestrial Ecology), Chemistry (minor), Huxley College of the Environment, Western Washington University, GPA: 3.75

### ACADEMIC POSITIONS

- 2022 – US Forest Service ORISE Postdoctoral Fellow, PNW Research Station
- 2022 Climate Impacts Group King County Wildfire Preparedness Research Assistant
- 2017 – 2022 Graduate Research Assistant, University of Washington, School of Environmental and Forest Sciences
- 2021 NW Climate Adaptation Science Center Deep Dive Summer Fellow
- 2013 – 2017 Faculty Research Assistant, Oregon State University, Department of Forest Engineering Resources and Management
- 2011 – 2013 Graduate Research Assistant, Oregon State University, Department of Forest Engineering Resources and Management

### PUBLICATIONS

#### [Google Scholar Profile](#)

#### Refereed Journal Articles

- Agne, M.C.**, J.B. Fontaine, N.J. Enright, B.J. Harvey. 2022. Fire interval and post-fire climate effects on serotinous forest resilience. *Fire Ecology* 18: art22.  
<https://doi.org/10.1186/s42408-022-00145-4>
- Michalak, J.L., J.J. Lawler, J. Gross, **M.C. Agne**, R.I. Emmet, H. Hsu, V. Griffey. 2022. Assessing climate change vulnerability of natural resources in U.S. National Parks. *Conservation Science and Practice*: e12703. <https://doi.org/10.1111/csp2.12703>
- Agne, M.C.**, J.B. Fontaine, N.J. Enright, S.M. Bisbing, B.J. Harvey. 2022. Demographic processes underpinning post-fire resilience in California closed-cone pine forests: the importance of fire interval, stand structure, and climate. *Plant Ecology* 223: 751-767.  
<https://doi.org/10.1007/s11258-022-01228-7>
- Saberi, S.J., **M.C. Agne**, B.J. Harvey. 2022. Do you CBI what I see? The relationship between Composite Burn Index and quantitative field measures of burn severity varies across

- gradients of forest structure. *International Journal of Wildland Fire* 31(2): 112-123.  
<https://doi.org/10.1071/WF21062>
- Morris, J.E., M.S. Buonanduci, **M.C. Agne**, M.A. Battaglia, B.J. Harvey. 2022. Does the legacy of historical thinning treatments foster resilience to bark beetle outbreaks in subalpine forests? *Ecological Applications* 32(1): e02474.
- Buonanduci, M.S., J.E. Morris, **M.C. Agne**, B.J. Harvey. 2020. Neighborhood context mediates probability of host tree mortality in a severe bark beetle outbreak. *Ecosphere* 11:e03236.
- Cansler, C.A., +74 other authors including **M.C. Agne**. 2020. The Fire and Tree Mortality Database, for empirical modeling of individual tree mortality after fire. *Scientific Data* 7:194.
- Woolley, T., D.C. Shaw, L.T. Hollingsworth, **M.C. Agne**, S. Fitzgerald, A. Eglitis, L. Kurth. 2019. Beyond red crowns: complex changes in surface and crown fuels and their interactions 32 years following mountain pine beetle epidemics in south-central Oregon, USA. *Fire Ecology* 15:4.
- Agne, M.C.**, P.A. Beedlow, D.C. Shaw, D.R. Woodruff, E.H. Lee, S.P. Cline, R.L. Comeleo. 2018. Interactions of predominant insects and diseases with climate change in Douglas-fir forests of western Oregon and Washington, U.S.A. *Forest Ecology and Management* 409:317–332.
- Hulbert, J.M., **M.C. Agne**, T.I. Burgess, F. Roets, M.J. Wingfield. 2017. Urban environments provide opportunities for early detections of *Phytophthora* invasions. *Biological Invasions* 19:3629–3644.
- Shaw, D.C., **M.C. Agne**. 2017. Fire and dwarf mistletoe (*Viscaceae: Arceuthobium* species) in western North America: contrasting *Arceuthobium tsugense* and *Arceuthobium americanum*. *Botany* 95:231–246.
- Agne, M.C.**, T. Woolley, S. Fitzgerald. 2016. Fire severity and cumulative disturbance effects in the post-mountain pine beetle lodgepole pine forests of the Pole Creek Fire. *Forest Ecology and Management* 366:73–86.
- Agne, M.C.**, D.C. Shaw, T.J. Woolley, M.E. Queijeiro-Bolaños. 2014. Effects of dwarf mistletoe on stand structure of lodgepole pine forests 21-28 years post-mountain pine beetle epidemic in central Oregon. *PLoS ONE* 9:e107532.

*In review or revision*

- Agne, M.C.**, J.B. Fontaine, N.J. Enright, S.M. Bisbing, B.J. Harvey., in revision. Fuel profiles and severe reburn potential recover rapidly after stand-replacing fire in closed-cone pine forests. *Forest Ecology and Management*.
- Buonanduci, M.S., J.E. Morris, **M.C. Agne**, M.A. Battaglia, B.J. Harvey., in review. Fine-scale landscape heterogeneity shapes compensatory growth responses to a severe bark beetle outbreak. *Landscape Ecology*.
- Morris, J.E., M.S. Buonanduci, **M.C. Agne**, M.A. Battaglia, D.C. Donato, B.J. Harvey., in revision. Fuel profiles and biomass carbon following bark beetle outbreaks: Insights for disturbance interactions from a historical thinning experiment. *Ecosystems*.

**TECHNICAL REPORTS AND RESEARCH BRIEFS**

- Harvey, B.J., **M.C. Agne**, S.S. Kruszka. 2022. Bishop pine forest health and pitch canker disease field study on Point Reyes Peninsula, CA. Final report to the Golden Gate Parks Conservancy.

- Agne, M.C.**, B.J. Harvey. 2022. The race between fuels and fruits: testing mechanisms of serotinous forest resilience to short-interval severe reburns. Final report to Joint Fire Sciences Program JFSP Project 19-1-01-16.
- Michalak, J.L., J.J. Lawler, **M. Agne**, R. Emmet, H. Hsu, and V. Griffey. 2022. Chapter 3: A review of vulnerability assessments for natural resources of the NPS. Pages 63-93 in Peek, K.M., B. R. Tormey, H.L. Thompson, A. C. Ellsworth, and C.H. Hoffman (editors). 2022. Climate change vulnerability assessments in the National Park Service: An integrated review for infrastructure, natural resources, and cultural resources. Natural Resource Report NPS/NRSS/CCRP/NRR—2022/2404. National Park Service, Fort Collins, Colorado. <https://doi.org/10.36967/nrr-2293650>.
- Mauger, G.S., M.A. Rozance, **M. Agne**, R. Pazdral, J. Robinson, K. Swensen, K.E. Kaiser, P. Pitt, B. Glenn. 2021. A deep dive into shallow waters: understanding and responding to climate-induced impacts on stream permanence in the Northwestern US. Northwest Climate Adaptation Science Center, University of Washington, Seattle.
- Harvey, B.J., **M.C. Agne**. 2021. Bishop pine (*Pinus muricata*) forest health. White paper, Golden Gate Parks Conservancy.
- Agne, M.C.**, B.J. Harvey. 2020. Is there evidence of post-fire recruitment failure in serotinous forests of the Pacific Northwest? Final report to the Northwest Climate Adaptation Science Center.
- Agne, M.C.** Pine (*Pinus* spp.) Dwarf Mistletoe. In: Pscheidt, J.W. and C.M. Ocamb, senior editors. 2014. Pacific Northwest Plant Disease Management Handbook. Corvallis, OR: Oregon State University.

## GRANTS, FELLOWSHIPS AND AWARDS

### *Research grants*

- 2020 – 2021 Joint Fire Science Program Graduate Innovation Award: *The race between fuels and fruits: testing mechanisms of serotinous forest resilience to short-interval severe reburns*. (\$25K—graduate student PI)
- 2019 – 2020 USGS Northwest Climate Adaptation Science Center Fellowship: *Is there evidence of post-fire recruitment failure in serotinous forests of the Pacific Northwest?* (\$47K— graduate student PI)

### *Travel awards*

- 2020 Student Travel and Meeting Award, UW College of the Environment (\$750)
- 2020 Northern California Botanists Student Travel Award (\$200)
- 2019 International Association for Landscape Ecology Student Travel Award (\$700)
- 2019 UW School of Environmental and Forest Sciences Director's Office Graduate Student Travel Award (\$300)
- 2019 UW Graduate School Fund for Excellence and Innovation Travel Award (\$200)
- 2018 Association for Fire Ecology TREE Grant Student Travel Award (\$425)
- 2018 UW School of Environmental and Forest Sciences Director's Office Graduate Student Travel Award (\$300)
- 2018 UW Graduate School Fund for Excellence and Innovation Travel Award (\$200)
- 2013 Western International Forest Disease Work Conference Graduate Student Travel Award (\$500)

2012 Lee Harris Graduate Student Travel Award, OSU Department of Forest Engineering Resources and Management (\$300)

*Fellowships and awards*

2022 Director's Award for Graduate Student of the Year, UW School of Environmental and Forest Sciences

2018 Director's Award for Student Service, UW School of Environmental and Forest Sciences (co-awarded with fellow Graduate Council founding members)

2018 Best Poster Award, Fire Continuum Conference, Association for Fire Ecology Annual Meeting

2018 Best Presentation Award, UW School of Environmental and Forest Sciences Graduate Student Symposium

2017 – 2020 Achievement Rewards for College Scientists Foundation Fellowship

2011 – 2013 Richard Strachan Graduate Fellowship, OSU College of Forestry

2011 – 2012 Hayes Silviculture Graduate Fellowship, OSU College of Forestry

2005 – 2006 Presidential Scholarship, Western Washington University

**PROFESSIONAL TECHNICAL SKILLS**

Strong background in parametric and non-parametric statistical analyses including generalized linear mixed models, generalized additive models, Random Forests, principal components analysis, and ordination. Proficient with R/RStudio, RMarkdown, ArcGIS, familiar with Python and Google Earth Engine. Experience with spatial analyses using Aerial Detection Survey, NAIP, and Monitoring Trends in Burn Severity datasets.

**PRESENTATIONS AT PROFESSIONAL MEETINGS (presenting author only)**

*Invited presentations*

**Agne, M.C.**, J.B. Fontaine, N.J. Enright, B.J. Harvey. 2021. Too soon? Evidence of declining post-fire regeneration in reburned serotinous forests. 9<sup>th</sup> International Fire Ecology and Management Congress. Pensacola, FL (held virtually). Oral presentation.

**Agne, M.C.**, J.B. Fontaine, N.J. Enright, B.J. Harvey. 2021. Too soon? Evidence of declining post-fire regeneration in reburned serotinous forests. International Association of Landscape Ecology—North America Annual Meeting. Reno, NV (held virtually). Oral presentation.

**Agne, M.C.**, J.B. Fontaine, N.J. Enright, B.J. Harvey. 2020. Effects of a short interval reburn on knobcone pine regeneration in the Carr Fire. Northern California Botanists Symposium, Chico, CA. Oral presentation.

**Agne, M.C.**, J.B. Fontaine, N.J. Enright, S. Bisbing, B.J. Harvey. 2019. The race between fuels and fruits in the serotinous pine forests of North America. Interval Squeeze Symposium. Perth, Western Australia. Oral presentation.

**Agne, M.C.**, D.C. Shaw, P.A. Beedlow, E.H. Lee, S.P. Cline, R.L. Comeleo. 2018. Interactions of major insects and diseases with climate change in west-side Douglas-fir. State of the State, Corvallis, OR. Oral presentation.

**Agne, M.C.**, T.J. Woolley, S.A. Fitzgerald. 2016. Post-mountain pine beetle lodgepole pine forests: assessing fire and cumulative disturbance effects in the Pole Creek Fire. Central Oregon Fire Science Symposium, Bend, OR. Oral presentation.

*Contributed presentations*

- Agne, M.C.,** J.B. Fontaine, N.J. Enright, S. Bisbing, B.J. Harvey. 2019. The race between fuels and fruits: coupling seed bank and fuels dynamics to understand forest response to short interval fires. US-International Association for Landscape Ecology Annual Meeting, Fort Collins, CO. Oral presentation.
- Agne, M.C.,** J.B. Fontaine, N.J. Enright, S. Bisbing, B.J. Harvey. 2018. Fuels vs. fruits: Likelihood of reburn and transition to non-forest in California closed-cone pine forests. Fire Continuum Conference, Association for Fire Ecology Annual Meeting, Missoula, MT. Poster presentation.
- Agne, M.C.,** B.J. Harvey. 2018. Post-fire propagule availability and regeneration following short interval fires in California closed-cone conifer forests. School of Environmental and Forest Sciences Graduate Student Symposium, Seattle, Washington. Oral presentation.
- Agne, M.C.,** D.C. Shaw. 2016. Interactions of dwarf mistletoe, mountain pine beetle, and fire in the lodgepole pine forests of central Oregon. IUFRO Unit 7.02.11 Meeting “Mistletoes: Pathogens, Keystone Resource, and Medicinal Wonder” Ashland, OR. Poster presentation.
- Agne, M.C.,** T.J. Woolley, S.A. Fitzgerald. 2015. Post-mountain pine beetle lodgepole pine forests: assessing fire and cumulative disturbance effects in the recently burned Pole Creek Fire. Association for Fire Ecology International Fire Ecology and Management Congress, San Antonio, TX. Oral presentation.
- Agne, M.C.,** T.J. Woolley, D.C. Shaw. 2013. Influence of dwarf mistletoe on canopy fuels and potential fire behavior in lodgepole pine forests 21-28 years post-mountain pine beetle epidemic in central Oregon. Western International Forest Disease Work Conference, Waterton, Alberta. Oral presentation.
- Agne, M.C.,** T.J. Woolley, D.C. Shaw. 2013. Impacts of dwarf mistletoe (*Arceuthobium americanum*) on canopy structure of lodgepole pine-dominated forests post-mountain pine beetle epidemic in central Oregon. Western Forestry Graduate Research Symposium, Corvallis, OR. Oral presentation.
- Agne, M.C.,** T.J. Woolley, D.C. Shaw. 2012. Does dwarf mistletoe (*Arceuthobium americanum*) increase the likelihood of crown fire in post-mountain pine beetle (*Dendroctonus ponderosae*) epidemic lodgepole pine forests in central Oregon? Association for Fire Ecology International Fire Ecology and Management Congress, Portland, OR. Poster presentation.
- Agne, M.C.,** T.J. Woolley, D.C. Shaw. 2012. The effects of mountain pine beetle and dwarf mistletoe on canopy structure and potential crown fire behavior in central Oregon climax lodgepole pine forests. Western International Forest Disease Work Conference, Lake Tahoe, CA. Poster presentation.
- Agne, M.C.,** T.J. Woolley, D.C. Shaw. 2012. The effects of mountain pine beetle and dwarf mistletoe on canopy structure and potential crown fire behavior in central Oregon climax lodgepole pine forests. Oregon Society of American Foresters Annual Meeting, Seaside, OR. Poster presentation.
- Agne, M.C.,** T.J. Woolley, D.C. Shaw. 2012. The effects of mountain pine beetle and dwarf mistletoe on canopy structure and potential crown fire behavior in central Oregon climax lodgepole pine forests. Western Forestry Graduate Research Symposium, Corvallis, OR. Poster presentation.

## **TEACHING EXPERIENCE**

- 2022 Teaching Assistant, Forests, Fire, and Society, University of Washington.
- 2021 Teaching Assistant, Forest Ecology, University of Washington.
- 2018 – 2019 Teaching Assistant, Old-Growth Forest Ecology and Management, University of Washington.
- 2017 Teaching Assistant, Forest Community Ecology, University of Washington.
- 2016 Co-instructor, Field Forest Health, Oregon State University.
- 2014 Teaching Assistant, Forest Ecology, Oregon State University.

## **UNDERGRADUATE STUDENT MENTORING**

- 2020 – 2021 Madison Stone, University of Washington, Undergraduate Capstone Project
- 2019 – 2020 Ashley Hillis, University of Washington, Undergraduate Capstone Project
- 2018 – 2019 Arielle Link, Colorado College, Senior Thesis (primary supervisor: Dr. Rebecca Barnes)

## **INVITED GUEST LECTURES**

- 2022 University of Washington, ESRM 101: Forests, Fire, and Society
- 2021 University of Washington, ESRM 490: Forest Ecology
- 2020 University of Washington, ESRM 315: Old Growth Forest Ecology and Management
- 2019 University of Washington, ESRM 315: Old Growth Forest Ecology and Management
- 2018 University of Washington, ESRM 315: Old Growth Forest Ecology and Management
- 2017 University of Washington, SEFS 501: Forest Community Ecology
- 2016 Oregon State University, Forestry 599: Forest Health and Protection
- 2015 Oregon State University, Forestry 599: Forest Health and Protection

## **OUTREACH ACTIVITIES**

- 2021 Northwest Climate Adaptation Science Center: *A deep dive into shallow waters: managing climate change effects on stream drying in the Northwest*. Workshop facilitator/co-organizer.
- 2021 UW Program on Climate Change Schooner Series on Wildfire: *Is post-fire forest regeneration declining with increasing fire activity?* Invited speaker.
- 2020 Northwest Climate Adaptation Science Center: *Declines in post-fire serotinous forest regeneration with climate change*. Invited speaker.
- 2019 EarthTones podcast: *Forests, fire, and pathogens*. Invited speaker.
- 2018 Kings Park Science Seminar: *Fuels vs. fruits: coupling canopy seed bank and fuel dynamics to anticipate likelihood of plant population persistence*. Invited speaker.
- 2018 UW College of the Environment Labs Unlocked: *Beetles, blazes, and biofuels*. Invited speaker, co-presented with Dr. Brian Harvey.
- 2017 Cape Citizen Science: Education and monitoring volunteer.
- 2016 Eco-Rangers Nature Club: *Recognizing plant disease*. Co-organizer/leader.
- 2016 Joint Fire Science Program: *Mountain pine beetle and fuels in central Oregon*. Field trip co-organizer/leader.
- 2016 Kirstenbosch Botanical Garden: Plant disease monitoring volunteer.
- 2015 Northwest Fire Science Consortium: *Fuels patterns and a fire following mountain pine beetle mortality in the climax lodgepole pine forests of southern central Oregon*. Invited speaker, co-presented with Dr. Dave Shaw.

- 2015 Forest Health Monitoring Work Group Meeting: *Post-mountain pine beetle lodgepole pine forests: assessing fire behavior and fire effects in the recently burned Pole Creek fire area, Deschutes National Forest, Oregon*. Poster presentation.
- 2014 Forest Health Monitoring Work Group Meeting: *Post-mountain pine beetle lodgepole pine forests: assessing fire behavior and fire effects in the recently burned Pole Creek fire area, Deschutes National Forest, Oregon—interim findings*. Poster presentation.
- 2013 Inspiration Dissemination: *Mistletoe, beetles, and fire*. Invited speaker.
- 2013 Apprenticeships in Science and Engineering: *Native plant identification workshop*. Co-organizer/leader.
- 2013 Institute for Applied Ecology: *Native plant monitoring for K-12*. Volunteer.
- 2013 Oregon Small Woodland Owners Association: *Mountain pine beetle and dwarf mistletoe—fueling the fires of central Oregon?* Invited speaker.
- 2012 Forest Health Protection Region 6: *Interacting disturbance agents in lodgepole pine of central Oregon*. Invited speaker, co-presented with Dr. Dave Shaw.
- 2009 Nooksack Salmon Enhancement Association Restoration Intern

### **PROFESSIONAL AND DEPARTMENTAL SERVICE**

- Graduate student representative, Climate Adaptation Cluster Hire Search Committee, School of Environmental and Forest Sciences, University of Washington (2021 – 2022)
- Manuscript reviewer (average 1-3 reviews per year) for: Botany, International Journal of Wildland Fire, Journal of Vegetation Science, Plant Ecology, PLOS One.
- Program mentor, Interdisciplinary College of the Environment Mentoring Program, University of Washington (2020)
- Representative, Graduate Council, School of Environmental and Forest Sciences, University of Washington (2018 – 2019)
- Graduate event planning committee member, School of Environmental and Forest Sciences, University of Washington (2018)
- Program mentor, Forestry Graduate-Undergraduate Mentorship Program, Oregon State University (2013)
- Grant reviewer, Lee Harris Travel Grant, Forest Engineering, Resources, and Management, Oregon State University (2013)
- Representative, Graduate Student Organization, College of Forestry, Oregon State University (2011 – 2013)
- Graduate event planning committee member, College of Forestry, Oregon State University (2011 – 2013)

### **PROFESSIONAL ORGANIZATION MEMBERSHIP**

- Association for Fire Ecology, Ecological Society of America, International Association of Wildland Fire, International Association for Landscape Ecology, Western International Forest Disease Working Group, Xi Sigma Pi; Zeta Chapter