

SCHOOL OF FORESTRY

MONTHLY NEWSLETTER



NOVEMBER 2020



PUBLICATIONS THIS MONTH

Featured Faculty: D. Binkley, M. Bowker, C. Edeley, A. Sachez-Meador, A. Thode, and F. Walker

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AWARDS & GRANTS

Faculty: A. Thode, P. Fule, C. Edgeley, and B. Wolfson

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THE NAU SCHOOL OF FORESTRY

The NAU forestry program is a vibrant, diverse and active place of learning and research and a feeling of community. Here are just some of the activities this month of our internationally distinguished faculty and researchers.

The School of Forestry is a gateway to a fulfilling forestry career; it's also an invitation to create sustainable solutions for the natural world and outdoor enjoyment for years to come.

PRESENTATIONS & OUTREACH

Andrea Thode, Jesse Young, Kristen Karing, Lulu Peach, Pete Fule, D. Binkley

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For more information visit nau.edu/forestry

Publications: [NAU authors in **bold**, * undergraduate student]

Chamberlain*, C.P., **Meador, A.J.S.** and **Thode, A.E.**, 2020, Airborne lidar provides reliable estimates of canopy base height and canopy bulk density in southwestern ponderosa pine forests. *Forest Ecology and Management*, 481, p.118695. <https://doi.org/10.1016/j.foreco.2020.118695>

Coe, K.K., Greenwood, J.L., Slate, M.L., Clark, T.A., Brinda, J.C., Fisher, K.M., Mishler, B.D., **Bowker, M.A.**, Oliver, M.J., Ebrahimi, S. and Stark, L.R., 2020. Strategies of desiccation tolerance vary across life phases in the moss *Syntrichia caninervis*. *American Journal of Botany*. <https://bsapubs.onlinelibrary.wiley.com/doi/epdf/10.1002/ajb2.1571>

Edgeley, C.M., and **M.M. Colavito**. 2020. Local Experiences with the 2019 Museum Fire and Associated Flood Risk: A Survey of Flagstaff-Area Residents. ERI White Paper—Issues in Forest Restoration. Ecological Restoration Institute, Northern Arizona University. 40 p. <https://cdm17192.contentdm.oclc.org/digital/collection/p17192coll1/id/1067/rec/1>

They also published a fact sheet from their recent ERI white paper focused on local community response to the 2019 Museum Fire <https://cdm17192.contentdm.oclc.org/digital/collection/p17192coll1/id/1069/rec/2>

Remke, M.J., Johnson, N.C., **Wright***, J., Williamson, M. and **Bowker, M.A.**, Sympatric pairings of dryland grass populations, mycorrhizal fungi, and associated soil biota enhance mutualism and ameliorate drought stress. *Journal of Ecology*. <https://besjournals.onlinelibrary.wiley.com/doi/10.1111/1365-2745.13546>

Sobek, C.J. & **F.M. Walker**. 2020. Square salads: Exploring the diet of the southern hairy-nosed wombat (*Lasiorhinus latifrons*) via DNA metabarcoding. *Australian Mammalogy*, <https://doi.org/10.1071/AM20021>.

Walker, F.M., J.R. Upton, C.J. Sobek, D. Taggart, & M. Gaughwin. 2020. Genetic monitoring of southern hairy-nosed wombats over two decades reveals that individuals can live for at least 18 years in the same warrens. *Australian Mammalogy*, <https://doi.org/10.1071/AM20012>.

Gaughwin, M., **F.M. Walker**, L. Woolford, J. Upton, C. Sobek, A. Johnson, & D. Taggart. 2020. Observations on the mortality of young southern hairy-nosed wombats (*Lasiorhinus latifrons*) in the Murraylands of South Australia. *Australian Mammalogy*, <https://doi.org/10.1071/AM20045>.

Gaughwin, M., A. Horsup, C. Dickman, R. Wells, **F.M. Walker**, & D. Taggart. 2020. Variation in the sex-ratio of pouch-young and adult hairy-nosed wombats (*Lasiorhinus latifrons* and *Lasiorhinus krefftii*). *Behavioral Ecology and Sociobiology* 74:90-103. <https://rdcu.be/b47zJ>.

Binkley, D., Campoe, O.C., Alvares, C.A., Carneiro, R.L., and Stape, J.L. 2020. Variation in whole-rotation yield among Eucalyptus genotypes in response to water and heat stresses: The TECHS project. *Forest Ecology and Management* 462: 117953. <https://www.sciencedirect.com/science/article/pii/S0378112719324843>

Ryan, M.G., Stape, J.L., **Binkley, D.**, and Alvares, C.A. 2020. Cross-site patterns in the response of Eucalyptus plantations to irrigation, climate and intra-annual weather variation. *Forest Ecology and Management* 475, 118444. <https://www.sciencedirect.com/science/article/pii/S0378112720312135>

Binkley, D., and R.F. Fisher. 2020. *Ecology and Management of Forest Soils* (5th Edition). Wiley, New York. 440 p.



Mattos, E.M. de, **Binkley, D.**, Campoe, O.C., Alvares, C.A., and Stape, J.L. 2020. Variation in canopy structure, leaf area, light interception and light use efficiency among Eucalyptus clones. *Forest Ecology and Management* 463:118038. <https://www.sciencedirect.com/science/article/pii/S0378112719322352>

Lim, H., Alvares, C.A., Ryan, M.G., and **Binkley, D.** 2020. Assessing the cross-site and within-site response of potential production to atmospheric demand for water in Eucalyptus plantations. *Forest Ecology and Management* 464:118068. <https://www.sciencedirect.com/science/article/pii/S0378112719325265>

Fernández-Tschieder, E., **Binkley, D.**, Bauerle, W. 2020. Production ecology and reverse growth dominance in an old-growth ponderosa pine forest. *Forest Ecology and Management* 460:117891. <https://www.sciencedirect.com/science/article/pii/S0378112719323205>

Campoe, O.C., Alvares, C.A., Carneiro, R.L., Stape, J.L., **Binkley, D.**, Ryan, M.G., Hubbard, R.M., Stahl, J., and Moreira, G. 2020. Climate and genotype influences on carbon fluxes and partitioning in Eucalyptus plantations. *Forest Ecology and Management* 475:118445. <https://www.sciencedirect.com/science/article/pii/S0378112720312147>

Binkley, D. 2020. Fires and Soils in Frequent-Fire Landscapes of the Southwest. Working Paper #43, Ecological Restoration Institute, Northern Arizona University, Flagstaff.

Binkley, D., and Romme, W.L. 2020. Aspen Next Generation. Western Landowners Alliance, 22 p.

Binkley, D., Richter, D.D., Pouyat, R.V., and Geiser, L.H. 2020. State of forest and rangeland soils research in the United States. Pp. 1-8 in: *Forest and Rangeland Soils of the United States Under Changing Conditions*, R. V. Pouyat et al. (eds.), Springer, <https://doi.org/10.1007/978-3-030-45216-2>.

Binkley, D. 2020. Editorial: Four tips for communicating clearly with readers: designs, interpretations, and statistics. *Trees, Forests and People* 2, 100010.

Binkley, D., Fernandez, M.-E., Fredricksen, T., Mäkinen, H., Prescott, C., and Tomé, M. 2020. Editorial: How to avoid having your manuscript rejected: Perspectives from the Editors of *Forest Ecology and Management*. *Forest Ecology and Management* 473, 118321.

Campoe, O.C. and **Binkley, D.** 2020. Editorial: Environmental and genetic influences on growth in Eucalyptus plantations: The TECHS Special Issue. *Forest Ecology and Management* 476:118464.

New Grants:

Andrea Thode, Pete
Fule, Cat Edgeley, and
Barbara Wolfson

Southwest Fire Science Consortium grant (\$402,000)



Presentations/Outreach:

- Andrea Thode interviewed by the Australian Broadcasting Company on parallels between the fires in California and the 2019-2020 Fire season in Australia <https://www.abc.net.au/news/2020-09-18/record-drought-heat-driving-us-wildfires-mirroring-black-summer/12673376>
- Andrea Thode interviewed by the Washington Examiner on the issue making western wildfires worse <https://www.washingtonexaminer.com/policy/energy/it-isnt-only-climate-change-making-the-western-wildfires-worse>
- Jesse Young Southwest Fire Science webinar series with **Andi Thode**. <https://www.swfireconsortium.org/2020/10/13/oct-22-2020-effects-of-policy-change-on-wildland-fire-management-strategies>
- Lulu Peach 1st place Poster award winner at Society of American Foresters National Convention; co-advised by **Kristen Waring** and **Pete Fule**. Peach LP, Waring KM, Fulé PZ, Swenson JK, Menon M, Eckert AJ and JB Bagley. Unraveling drought sensitivity via dendroecological investigation of *Pinus strobiformis* & *P. flexilis* hybrid individuals. Society of American Foresters National Convention. Virtual, October 2020.
- Jeff Jenness gave a talk entitled "Springs Online and the Springs Geodatabase: A long-term database of springs and spring-dependent species" to the EPA Region 9 Wetland Program Development Grant Virtual Conference on November 18, 2020. <https://www.aswm.org/wetland-programs/6309-epa-region-9-virtual-conference> with Larry Stevens, Jeri Ledbetter, Alek Mendoza, Andrea Hazelton and Brianna Mann, all with the Springs Stewardship Institute of the Museum of Northern Arizona

