

# SCHOOL OF FORESTRY

## MONTHLY NEWSLETTER



AUGUST 2020



## THE NAU SCHOOL OF FORESTRY

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

## PUBLICATIONS THIS MONTH

Featured Faculty: A. Antoninka, D. Auty, M. Bowker, A. De la Torre, C. Edgerley, P. Fulé, R. Hofstetter, K. Kolb, J. Jenness, A. Sánchez Meador, and A. Thode

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## AWARDS & GRANTS

Faculty: W. Covington, T. Kolb, A. Thode, A. De la Torre

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## PRESENTATIONS & OUTREACH

Jeff Jenness, T. Kolb

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For more information visit [nau.edu/forestry](http://nau.edu/forestry)

**Publications** (forestry students are in **Bold**):

Eldridge, David J., Sasha Reed, Samantha K. Travers, Matthew A. Bowker, Fernando T. Maestre, Jingyi Ding, Caroline Havrilla et al. "The pervasive and multifaceted influence of biocrusts on water in the world's drylands." *Global Change Biology* (2020). <https://onlinelibrary.wiley.com/doi/10.1111/gcb.15232>

Stevens, Lawrence E., Jeffrey Jenness, and Jeri D. Ledbetter. "Springs and Springs-Dependent Taxa of the Colorado River Basin, Southwestern North America: Geography, Ecology and Human Impacts." *Water* 12, no. 5 (2020): 1501. <https://www.mdpi.com/2073-4441/12/5/1501>

**Young, Jesse D.**, Alexander M. Evans, Jose M. Iniguez, Andrea Thode, Marc D. Meyer, Shaula J. Hedwall, Sarah McCaffrey, **Patrick Shin**, and Ching-Hsun Huang. "Effects of policy change on wildland fire management strategies: evidence for a paradigm shift in the western US?." *International Journal of Wildland Fire*. <https://www.publish.csiro.au/wf/WF19189>

Edgeley, Catrin M., and **Jack T. Burnett**. "Navigating the Wildfire–Pandemic Interface: Public Perceptions of COVID-19 and the 2020 Wildfire Season in Arizona." *Fire* 3, no. 3 (2020): 41. <https://www.mdpi.com/2571-6255/3/3/41>

Birol, Inanc, and Amanda De la Torre. "Sequencing and Assembling the Nuclear and Organelle Genomes of North American Spruces." In *The Spruce Genome*, pp. 1-8. Springer, Cham, 2020. <https://link.springer.com/book/10.1007/978-3-030-21001-4>

**Weiss, Matthew**, Richard A. Snieszko, Daniela Puiu, Marc W. Crepeau, Kristian Stevens, Steven L. Salzberg, Charles H. Langley, David B. Neale, and Amanda R. De La Torre. "Genomic basis of white pine blister rust quantitative disease resistance and its relationship with qualitative resistance." *The Plant Journal* (2020). <https://onlinelibrary.wiley.com/doi/full/10.1111/tpj.14928>

**Rodman, Kyle C.**, Thomas T. Veblen, Mike A. Battaglia, Marin E. Chambers, Paula J. Fornwalt, Zachary A. Holden, Thomas E. Kolb, **Jessica R. Ouzts**, and Monica T. Rother. "A changing climate is snuffing out post-fire recovery in montane forests." *Global Ecology and Biogeography*. <https://onlinelibrary.wiley.com/doi/10.1111/geb.13174>

Edgeley, Catrin M., Amanda M. Stasiewicz, and Darcy H. Hammond. "Prioritizing Research Needs in Natural Resources: Using Q-Methodology as a Focus Group Discussion Tool." *Journal of Forestry* (2020). <https://doi.org/10.1093/jofore/fvaa035>

**Vaughan, Damon**, David Auty, Joseph Dahlen, Andrew J. Sánchez Meador, and Kurt H. Mackes. "Modelling variation in wood stiffness of *Pinus ponderosa* using static bending and acoustic measurements." *Forestry: An International Journal of Forest Research* (2020). <https://academic.oup.com/forestry/advance-article/doi/10.1093/forestry/cpaa030/5879062>

**Owen, Suzanne M.**, Carolyn H. Sieg, Peter Z. Fulé, Catherine A. Gehring, L. Baggett, José M. Iniguez, Paula J. Fornwalt, and Mike A. Battaglia. "Persistent effects of fire severity on ponderosa pine regeneration niches and seedling growth." *Forest Ecology and Management* 477 (2020): 118502. <https://www.sciencedirect.com/science/article/pii/S0378112720312718?via%3Dihub>



**Publications** (forestry students are in **Bold**):

Tucker, C., Antoninka, A., Day, N., Poff, B., & Reed, S. (2020). Biological soil crust salvage for dryland restoration: an opportunity for natural resource restoration. *Restoration Ecology*, 28(S2), S9–S16. <https://doi.org/10.1111/rec.13115>

**Uhey, D.A.**, R.W. Hofstetter, K.A. Haubensak, **S. Vissa** and S. Sky Stephens. 2020. Climate and vegetation structure shape ant communities along elevational gradients on the Colorado Plateau. *Ecology and Evolution* 10: 8313–8322 <http://doi.org/10.1002/ece3.6538>

**Laughlin, D. C.**, J. R. Gremer, P. B. Adler, R. M. Mitchell, and M. M. Moore. *In Press*. The net effect of functional traits on fitness. *Trends in Ecology and Evolution (TREE)*.

Moreau, G., D. Auty, D. Pothier, J. Shi, J. Lu, A. Achim, W. Xiang. (2020) Long-term tree and stand growth dynamics after thinning of various intensities in a temperate mixed forest. *Forest Ecology and Management* 473, 118311, <https://doi.org/10.1016/j.foreco.2020.118311>.

**Grover, H. S.**, Bowker, M. A., & Fulé, P. Z. (2020). Improved, scalable techniques to cultivate fire mosses for rehabilitation. *Restoration Ecology*, 28(S2), S17–S24. <https://doi.org/10.1111/rec.12982>

Antoninka, A., Faist, A., **Rodriguez-Caballero, E.**, **Young, K. E.**, Chaudhary, V. B., Condon, L. A., & Pyke, D. A. (2020). Biological soil crusts in ecological restoration: emerging research and perspectives. *Restoration Ecology*, 28(S2), S3–S8. <https://doi.org/10.1111/rec.13201>

Antoninka, A., Bowker, M. A., Barger, N. N., Belnap, J., Giraldo-Silva, A., Reed, S. C., Garcia-Pichel, F., & Duniway, M. C. (2020). Addressing barriers to improve biocrust colonization and establishment in dryland restoration. *Restoration Ecology*, 28(S2), S150–S159. <https://doi.org/10.1111/rec.13052>

Bowker, M. A., Antoninka, A. J., & Chuckran, P. F. (2020). Improving field success of biocrust rehabilitation materials: hardening the organisms or softening the environment? *Restoration Ecology*, 28(S2), S177–S186. <https://doi.org/10.1111/rec.12965>

**Doherty, K.**, Bowker, M. A., Durham, R. A., Antoninka, A., Ramsey, P., & Mummey, D. (2020). Adapting mechanized vascular plant seed dispersal technologies to biocrust moss restoration. *Restoration Ecology*, 28(S2), S25–S31. <https://doi.org/10.1111/rec.12998>

Faist, A. M., Antoninka, A. J., Belnap, J., Bowker, M. A., Duniway, M. C., Garcia-Pichel, F., Nelson, C., Reed, S. C., Giraldo-Silva, A., Velasco-Ayuso, S., & Barger, N. N. (2020). Inoculation and habitat amelioration efforts in biological soil crust recovery vary by desert and soil texture. *Restoration Ecology*, 28(S2), S96–S105. <https://doi.org/10.1111/rec.13087>

Mallen-Cooper, M., Bowker, M. A., Antoninka, A. J., & Eldridge, D. J. (2020). A practical guide to measuring functional indicators and traits in biocrusts. *Restoration Ecology*, 28(S2), S56–S66. <https://doi.org/10.1111/rec.12974>





**Awards:**

Wally Covington      Class of SAF 2020 Fellow

[https://eforester.org/Main/SAF\\_News/2020/SAF\\_Names\\_18\\_Members\\_as\\_2020\\_Fellows.aspx](https://eforester.org/Main/SAF_News/2020/SAF_Names_18_Members_as_2020_Fellows.aspx)

**Grants:**

Tom Kolb, Andi Thode      NASA mission: investigate the use of satellite-based remote sensing to measure plant water stress and evapotranspiration in wildfire-burned forests

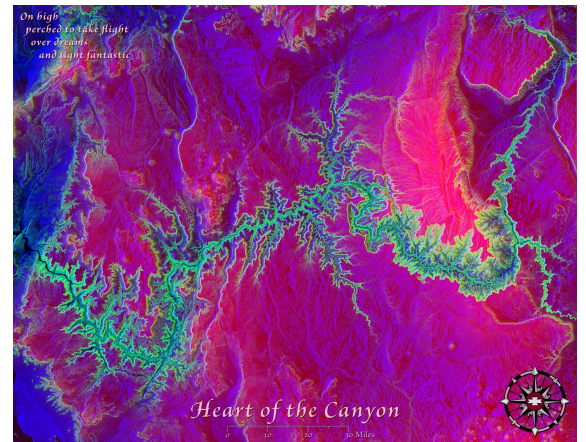
Amanda De la Torre      National Institute of Food and Agriculture (NIFA); Forest geneticist receives \$810,000 grant to study disease resistance in sugar pines

**Presentations:**

Jeff Jenness

A map named "Heart of the Canyon", which presents the Grand Canyon as a multiband image where Red = Elevation, Green = Slope and Blue = Aspect. The symbology reflects the magic and mystery I feel standing on the edge, looking in. This map was awarded the "Most Innovative Map" at the 40th International Esri User Conference.

<https://www.esri.com/en-us/about/events/uc/esri-uc-map-gallery#/map-detail/5eed4f9df3b616cb345a0473>

**Outreach Activities:**

Tom Kolb and PhD student Aalap Dixit are featured in an article in the Earth Island Journal titled "Preparing trees for a changing world"

<https://www.earthisland.org/journal/index.php/articles/entry/trees-changing-world-climate>

