

Partnering to preserve and restore healthy aspen ecosystems

MEMBER PARTICIPATION: The WAA is a virtual science-based community. Send us aspen-related publications, management plans, and media mentions and we'll help spread the word. Contact Paul Rogers, Director: p.rogers@usu.edu.

Share *Tremblings* with your friends and colleagues.

New members welcome! [Sign up here](#)

deter domestic and wild browsers from depleting aspen reproduction. The chronic issue of deer and cattle herbivory at Pando has been reported in both [scientific](#) and [popular](#) publications. Rep. Albrecht, in cooperation with a consortium of state, federal, and private partners, is asking for \$486,000 to install fences, cattle guards, and signage. This action raises the issue of whether Pando remains a wild natural wonder or simply a fenced relic? Details on the proposal can be found [here](#).

WAA HAPPENINGS

Aspen Conservation Science on the Radio—WAA Director Paul Rogers was featured on a recent broadcast of Science Moab's weekly radio show covering issues across the Colorado Plateau. You can listen to "[Beautiful & Resilient: The Iconic Aspen](#)" here with host Peggy Hodgkins. Give it a listen and let us know what you think!

Utah Roller Felling Advocates Look for Support—A recent article in the Salt Lake Tribune outlines ongoing efforts to gain state funding for two controversial natural resource initiatives: clear-felling spruce-fir forests using paired bulldozers with a heavy cable strung between them, and active wolf reduction. Titled "[Private interests ask for more Utah taxpayer money to 'roller fell' forests, lobby against wolves](#)" this will be the third time lawmakers hear an appeal from the organization 106 Restoration to gain funding for this aggressive regeneration practice.

Special Insert: Winter Aspen Art —We're happy to report that our efforts to solicit winter aspen art were obliged by two WAA members, each contributing three pieces. While the snowy season doesn't always elicit or inspire a lot of creativity we are very happy to see contributors set us straight on the beauty of this oft-overlooked season!

Pando's Future Framed by Fences?—State Rep. Carl Albrecht is requesting funding from the Utah legislature to encircle the iconic Pando aspen clone (a.k.a., "the world's largest organism" with 8 ft. (2.4 m) fencing to



The wonders of winter aspen unfold against an azure sky in northern Utah. Ice, snow, twigs, and sunshine conspire in a blue-white kaleidoscope infused by a low-angle sun—until the solar arc gains the edge and we welcome spring again (Photo: Paul Rogers).

TREMBLING

NEWSLETTER & BULLETIN BOARD

Vol. 15(1), February 2024

UPCOMING EVENTS

14th NAFEW in North Carolina—The North American Forest Ecology Workshop will take place in Asheville, NC June 24-27, 2024. The theme of the 14th NAFEW will be “Integrating goals: balancing dynamic forest management objectives.” This conference aims to bring field practitioners and researchers together around contemporary forest ecology issues. Abstracts for special sessions and poster presentations are due March 1, 2024. Updates and organizer contact information related to the 14th NAFEW can be found at the [conference website](#).

North American Congress for Conservation Biology—The NACCB will be meeting in Vancouver, BC June 23-28, 2024 at the University of British Columbia. This year’s theme is “Creating Diversity in Conservation from Summit to Sea.” To contribute a presentation, submit abstracts by Feb. 16. Further details are available at the [conference website](#).

Summer 2024 Aspen Workshops:

Interested in hosting an aspen science-management workshop near you? We’re open to proposals. Please note, a new model for such events requires identifying support funding sources up front rather than the previous ad hoc approach. Please contact [WAA Director](#) Paul Rogers about potential workshops.

- Gunnison, Colorado: plans are underway to host a fall aspen gathering which will blend climate/fire issues with cultural and agency management practices. Details to be announced. Contact [Benjamin Blonder](#) for additional information.

COMMENTARY

Do aspen smother or stoke the flames?

Kristin Nesbit, Staff Researcher, Dept. of Environmental Science, Policy, and Management, University of California Berkeley.



Perhaps you’ve heard of—or seen—fires decreasing in intensity (or extinguishing altogether) when they encounter an aspen stand. For a long time, firefighters, managers, and ecologists have characterized aspen forests as being low flammability, fire-resistant, “firebreak” forest types after observations of crown fires in conifer forests suddenly dropping down to surface fires upon entering adjacent aspen stands. However, high-intensity fires *do* spread through aspen-dominated forests, and aspen is known to regenerate vigorously after fire. For my M.S. research at Utah State University, I sought to explore this apparent paradox of aspen’s relationship with fire by asking, “what other evidence is there for aspen reducing fire behavior? Under what conditions does aspen support or inhibit fire?” Understanding if, how, where, and when aspen stands reduce fire activity is important for informing forest managers, firefighters, homeowners/developers, and policymakers.

To understand the state of the knowledge of aspen’s influence on fire activity, we scoured the literature and surveyed professionals with expertise in fire-aspen encounters. We found 84 relevant studies, primarily from the western United States and Canada, and heard from 137 practitioners who completed our survey. From both lines of investigation, we found that the presence of aspen in a stand *did* decrease fire activity in several cases, but results overall were mixed. In particular, pure aspen stands (i.e., little to no conifers in them) with herbaceous understories were found to be more likely to reduce fire behavior. Potential fire spread

and intensity increased as the percentage of conifers in a stand or surface fuel loads increased. In several studies, under windy and dry conditions (typically the fall in the western U.S. and spring in boreal Canada), even pure aspen stands were found to burn easily and intensely.

A major need that we identified after this review and survey was to describe the specific relationships between aspen characteristics and potential fire behavior. To address this, we measured the type, amount, and moisture of surface and canopy fuels in aspen stands in northern and east-central Utah that ranged in composition (pure aspen to conifer-dominant) and stand development stage (early to late). Compared to mixed aspen-conifer stands, we found that pure aspen stands (particularly late-development stage) generally had fuel conditions that are associated with low flammability (i.e., pure stands had sparse canopies of moist leaves and greater amounts of moist, live understory vegetation than dry, dead woody fuels), at least during the growing season. As the season progressed, the understory vegetation dried out, leading to higher potential fire spread in the fall.

Our studies indicate that promoting pure aspen stands with herbaceous understories in high priority areas (e.g., near structures, campgrounds, desired fuel break zones) increases the probability of slowing, diminishing, or inhibiting fire. Propagating aspen stands or removing conifers for use as a fuel treatment is a viable option, but as with any fuel treatment, continued maintenance of the stand to reduce accumulating fuel loads and conifer establishment is necessary. Finally, facilitating aspen improves the *probability* of arresting fire; it doesn't guarantee it.

WAA Creates

"WAA Creates" requests diverse aspen-related art from across our membership. We encourage fiction, folklore, poetry, drawings, paintings, photography, and other artistic expressions. [Send your stuff](#) to Tremblings.

*SEE SPECIAL ASPEN
WINTER ART INSERT
BELOW!*

RECENT ASPEN PUBLICATIONS

A word on Open Access: The Western Aspen Alliance strongly supports open access publishing (CC-BY). Articles with [hyperlinks](#) below are available for download and sharing following [Creative Commons](#) rules for attribution.

- Berrill, J.-P., C.M. Dagley, Y.G. Kim, and J.M. Varner. 2024. Pile burning after conifer removal from aspen stands affects tree mortality, regeneration, and understory recovery. *Forest Ecology and Management* 553:121602.
- Boyd, M. A., L. T. Berner, P. Doak, S. J. Goetz, B. M. Rogers, D. Wagner, X. J. Walker, and M. C. Mack. 2019. Impacts of climate and insect herbivory on productivity and physiology of trembling aspen (*Populus tremuloides*) in Alaskan boreal forests. *Environmental Research Letters* [14:085010](#).
- Comeau, P.G., and M. Bokalo. 2024. Aspen and Spruce Densities Affect Tree Size, Future Stand Volume, and

- Aboveground Carbon Following Precommercial Thinning. Forests [15:223](#).
- Crouch, C. D., R. W. Hofstetter, A. M. Grady, N. N. S. Edwards, and K. M. Waring. 2024. Oystershell scale (Hemiptera: Diaspididae) population growth, spread, and phenology on aspen in Arizona, USA. Environmental Entomology. (early release: [0046-225X](#)).
- Eiseman, C. S. 2024. On the Hosts and Larval Habits of *Framinghamia helvalis* (Walker) (Lepidoptera: Crambidae). Proceedings of the Entomological Society of Washington 125:[268-272](#).
- Gifford, T. S. 2023. Modeling Aspen Yield, Aspen Site Index, and the Effects of Sustainable Timber Harvest on Wildlife Habitat in Minnesota and the Lake States. Dissertation. University of Minnesota, St. Paul, MN.
- Kobziar, L. N., P. Lampman, A. Tohidi, A. K. Kochanski, A. Cervantes, A. T. Hudak, R. McCarley, B. Gullett, J. Aurell, R. Moore, D. C. Vuono, B. C. Christner, A. C. Watts, J. Cronan, and R. Ottmar. 2024. Bacterial Emission Factors: A Foundation for the Terrestrial-Atmospheric Modeling of Bacteria Aerosolized by Wildland Fires. Environmental Science & Technology 58:[2413-2422](#).
- Lewis, J. S., S. B. S. Clair, M. L. Fairweather, and E. S. Rubin. 2024. Fire severity and ungulate herbivory shape forest regeneration and recruitment after a large mixed-severity wildfire. Forest Ecology and Management 555:121692.
- MacNulty, D. R., E. M. Brice, and E. J. Larsen. Non-random sampling measures the occurrence but not the strength of a textbook trophic cascade. Ecology Letters <https://doi.org/10.1111/ele.14344>.
- Murray, B. A., N. C. Coops, L. Winiwarter, J. C. White, A. Dick, I. Barbeito, and A. Ragab. 2024. Estimating tree species composition from airborne laser scanning data using point-based deep learning models. ISPRS Journal of Photogrammetry and Remote Sensing 207:282-297.
- Šenfeldr, M., D.J. Shinneman, S.K. McIlroy, P.C. Rogers, and R.J. DeRose. 2024. Variable climate-growth relationships of quaking aspen (*Populus tremuloides*) among Sky Island mountain ranges in the Great Basin, Nevada, USA. Forest Ecology and Management 554:121664.
- Tembrock, L.R., F.A. Zink, G. Zhang, A. Schuhmann, C. Gu, and Z. Wu. 2024. Tracing the Maternal Line in Glacial–Interglacial Migrations of *Populus tremuloides*: Finding Trees for Future Sustainable Forests by Searching in the Past. Sustainability [16:949](#).
- Van Nuland, M. E., S. C. Daws, J. K. Bailey, J. A. Schweitzer, P. E. Busby, and K. G. Peay. 2023. Above- and belowground fungal biodiversity of *Populus* trees on a continental scale. Nature Microbiology 8: pages 2406–2419.

CONTACT WAA:

Paul C. Rogers, Director, Western Aspen Alliance, Utah State University, Logan, UT: [Email](#)

Emmon H. Rogers, *Tremblings* Reviewer/Editor, Lewis & Clark Co. Library, MT

Website: <http://www.western-aspen-alliance.org/>



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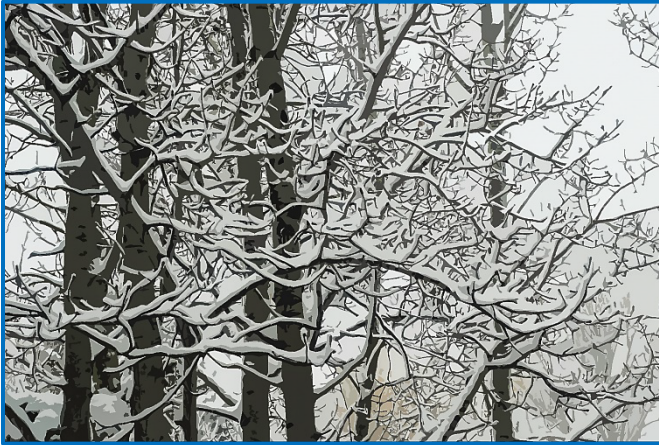
TREMBLINGS

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SPECIAL INSERT WINTER ASPEN WAA CREATES 2024

Front Yard



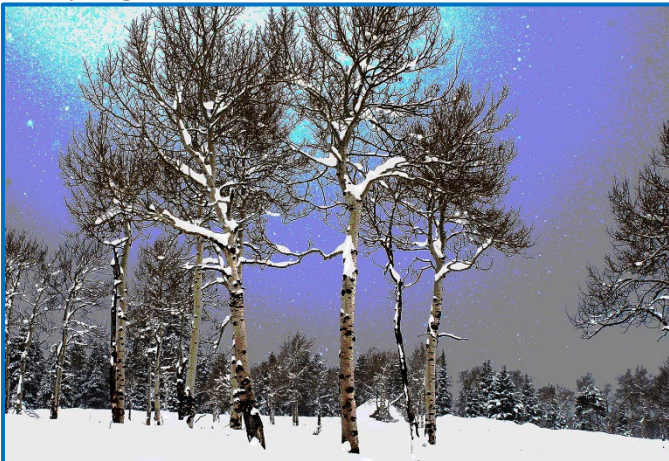
Susan Marsh, Wyoming

haiku 2 aspen in winter

autumn's golden leaves
buried by snow...even the
caterpillars are cold.

Connor Crouch, Missouri

Starry Night



Susan Marsh, Wyoming

haiku 1 aspen in winter

Leafless and silent,
the aspen seem to watch me.
Branch stubs shaped like eyes...

Connor Crouch, Missouri

Ridgeline Aspens



Susan Marsh, Wyoming

haiku 3 aspen in winter

snow bars the fence gate.
are the aspen trapped inside
or am I locked out?

Connor Crouch, Missouri