



TREMBLINGS

NEWSLETTER & BULLETIN BOARD

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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](#)

WAA HAPPENINGS

Spring Fund Drive Supports the WAA—Every spring we humbly request support from our members. The Western Aspen Alliance is a non-profit housed at Utah State University. We do not receive funding from USU, though they do provide facilities to assist the WAA. As mentioned previously, the WAA has become increasingly dependent on private donations. Please consider a [tax-exempt donation](#) at an amount within your personal comfort level; you can help sustain this regenerative organization with your dollars.

Sierra Nevada Aspen Working Group Forms—A new aspen working group is forming to address management issues in the Sierra Nevada region of California. An organization and information meeting will be held June 20, 2024. For additional details contact [Becky Estes](#), U.S. Forest Service, Zone Ecologist.

In the News—

May 15, 2023: Recreationists perceptions and aspen status was the topic of a recent article interviewing Georgie Corkery, Utah State University MS graduate. Her work combines an inventory of aspen conditions with a trailhead survey of user preferences at a high-use recreation area near Park City, Utah. See reporter Katie Hatzfeld's piece in the *Park Record* [here](#).

April 12, 2024: Wyoming arborglyphs are featured in a recent article from [WyoFile](#). At the crossroads of archeology, artistic expression, and ecology author Katie Klingsporn tracks cultural elements of

arborglyphs. One such carving won a recent archeology poster contest.

March 27, 2024: European aspen may be future biodiversity hotspots as the climate warms. A recent article in [Phys.Org](#) chronicles research describing how anticipated increases in disturbance will benefit *Populus tremula* (see Kusbach et al., Recent Publications). This keystone species supports high biodiversity, but has been neglected for centuries.



When last year's leaf doesn't leave and this spring's catkin appears in the same frame, an annual torch is passed. The old year hangs on through braided petiole and the new year blooms with potential fecundity. Such threads, biological or metaphorical, form subtle linkages in thought, motion, desiccation, and creation. (Photo: Paul Rogers).

UPCOMING EVENTS

Socially Valued, Ecologically Declining—Georgie Corkery and Paul Rogers will be leading two aspen naturalist walks [May 16](#) and [May 18](#), 2024 at RTS trailhead, Park City, Utah. The hike is sponsored by Snyderville Basin Recreation. These hikes are open to the public and will address basic aspen ecology, plus Georgie’s recently completed master’s thesis research combining user values and ecological assessments.

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. 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.” 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, August 28-29: This aspen workshop will explore climate-smart management and tribal co-stewardship, focusing on climate/genetics/fire science. Day 1: Facilitated open discussions, breakout themes, and tribal exchanges. Day 2: Field-based talks and synthesis. Registration and housing free to participants; some travel support available. [Additional details here](#).

COMMENTARY

Climate change insurance: planting aspen seedlings as fuel breaks

Catherine Schloegel, Program Manager, The Nature Conservancy, Boulder, Colorado

Jordan Mead, Resource Specialist, Summit County Open Space and Trails Department, Frisco, Colorado



As climate impacts accelerate, mountain communities living near forested areas across the West will be at increasing risk of more frequent wildfires. To protect neighborhoods from high-severity wildfires, land managers frequently clear strips of forest around homes and roads. We examined the potential to plant true aspen seedlings in these fuel breaks to increase habitat diversity while maintaining a reduced risk of wildfire. Historically, aspen has acted as a

natural fuel break in low- to medium- severity wildfires, although it is less well understood how it will impact contemporary fire occurrence, behavior, and severity. Scientists at the University of Colorado at Boulder are examining the relationship between aspen and fire, and in parallel we are working to generate knowledge about planting and survival.

Planting true aspen seedlings is infrequent in western U.S. forests. Previous outplanting has mostly relied on asexual vegetative reproduction from root suckers, which lack genetic diversity and may limit the species’ adaptive capacity to respond to changing future conditions. Important questions about the survival and growth of true seedlings limit adoption of this tool by land managers. Survival is often very low, ~10% two years post-planting, and drought stress and herbivory frequently cause significant mortality. In order for true seedlings to be a cost-effective restoration option, seedling survival must increase.

We planted true seedlings within a 23-acre former lodgepole pine stand, harvested in 2006 to reduce fire risk, near Breckenridge, Colorado. To protect seedlings from ungulate herbivory, we constructed a 2.4 m (8 ft)

tall wildlife fence around 1.5 ha (3.7 acres) . Within the enclosure, we installed snow fencing to alter the depth and timing of snowpack accumulation as a proxy for snow moisture. We planted 2,630 true seedlings with mulch, inside and outside of the wildlife fence, and monitored the influence of browsing and available moisture on survival and growth.



Two-year survival of mulched true seedlings is 62%, but growth is slow, with average annual growth increment of 0.3 cm. Seedling survival is 2.5x higher inside the wildlife fence, where seedlings are protected from browsing, than outside of it where significant ungulate browse occurs. The snow fence installed to increase soil moisture did not significantly influence seedling survival or growth.

We found that planting true aspen can be an effective restoration option used to increase the species' adaptive capacity to climate change. True seedlings increase genetic diversity and potentially confer a broad resilience to a hotter and drier future. True seedlings showed relatively high survival rates when protected from herbivory. Although the wildlife fence has proven effective, it provides a temporary solution and decisions on when and how to uninstall the fence are difficult given the slower than expected growth rates. The lack of a strong relationship between snow accumulation ("soil moisture") and survival urges further experimentation with snow fencing, as pocket gopher activity may also have contributed toward mortality of seedlings near to the fence. Growth was slow and characterized by frequent dieback and resprouting. The development of a target seedling for this location—better adapted to early and late season freezes—may increase growth.



As the creation of fuel breaks expands across the West, we expect managers to confront ongoing challenges related to their long-term management. There

is a need to better understand the effectiveness of aspen to influence wildfire behavior and an incredible value to projects like this one that address how, where and at what scales it is feasible to convert lodgepole pine forest to aspen. In an era of rapidly changing climate, we urge continued experimentation.

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.

Early Spring



Kati Gyulassy
Park City, Utah

From the artist: "Early Spring is an oil diptych started after the first melt of snow, in a time of stirring. Recovering from a COVID fever, I felt inspired to capture the hopefulness that spring brings with its warmth and energy of renewal."

See more of Kati Gyulassy's work at [KG Fine Art](#).

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.

Ara, M., B. D. Pinno, and P. G. Comeau. 2024. Mixing trembling aspen and white spruce increases the understory vegetation cover and improves soil properties but effects vary with broadleaf density. *Forest Ecology and Management* 562:121955.

Blossey, B., D. Hare, and D. M. Waller. 2024. Where have all the flowers gone? A call for federal leadership in deer management in the United States. *Frontiers in Conservation Science* 5. [10.3389/fcosc.2024.1382132](https://doi.org/10.3389/fcosc.2024.1382132).

Cook, M., T. Chapman, S. Hart, A. Paudel, and J. Balch. 2024. Mapping Quaking Aspen Using Seasonal Sentinel-1 and Sentinel-2 Composite Imagery across the Southern Rockies, USA. *Remote Sensing* 16:[1619](#).

Crouch, C. D., N. P. Wilhelmi, P. C. Rogers, M. M. Moore, and K. M. Waring. 2024. Sustainability and drivers of Populus tremuloides regeneration and recruitment near the southwestern edge of its range. *Forestry: An International Journal of Forest Research*: [cpae018](#).

Duan, H., S. M. Landhäusser, S. Ouyang, and D. T. Tissue. 2024. Saving for an emergency: How does carbon storage contribute to tree survival under long-term stress? *Tree Physiology*: tpae025.

Glennon, M. J., and H. E. Kretser. 2024. Factors Influencing Avian Nest Success in Exurban Residential Areas in the Adirondack Park. *The Adirondack Journal of Environmental Studies* 26:63-74.

Hanberry, B. B., and J. M. Seidel. 2024. Envisioning Transition from Open Landscapes to Forested Landscapes in the Routt National Forest, Colorado, United States. *Fire* [7:82](#).

Hart, A. T., S. M. Landhäusser, and E. Wiley. 2024. Tracing carbon and nitrogen reserve remobilization during spring leaf flush and growth following defoliation. *Tree Physiology*: tpae015.

Kapel, S. M. 2024. Evaluating Aspen Seedling Outplanting Success Following High Severity Wildfire in the Southwest Severity Wildfire in the Southwest. Utah State University, Logan, Utah, USA. [MS Thesis].

Kusbach, A., J. Šebesta, R. Hruban, P. Peška, and P. C. Rogers. 2024. Eurasian aspen (*Populus tremula* L.): Central Europe's keystone species 'hiding in plain sight'. *PLOS ONE* 19:[e0301109](#).

Marchais, M., D. Arseneault, and Y. Bergeron. 2024. Can the Impact of Gravel Roads on Organic Layer Thickness Explain the Distribution of Populus tremuloides along Road Networks in the Boreal Forest of Eastern Canada? *Forests* [15:298](#).

Man, R. 2024. Twenty-year responses of aspen stands to forest tent caterpillar defoliation and overstory dieback in Northeastern Ontario, Canada. *Forest Ecology and Management* 561:121869.

Miller, R. A., Z. P. Wallace, R. C. Skorkowsky, J. A. Blakesley, M. Mika, J. B. Buchanan, J. D. Carlisle, and M. Green. 2024. Flammulated owl distribution and habitat associations during the breeding season in the western United States. *Forest Ecology and Management* 558:121798.

Painter, L. E., R. L. Beschta, and W. J. Ripple. 2024. Aspen recovery in northern Yellowstone: A comment on Brice et al. (2021). *Ecology Letters* 27:e14353.

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