

*Partnering to preserve and restore healthy aspen ecosystems*

**MEMBER PARTICIPATION:** The WAA is a science-based virtual community. Send us aspen items of interest and we'll help spread the word. Contact Paul Rogers, Director: [p.rogers@usu.edu](mailto:p.rogers@usu.edu).

Share *Tremblings* with your friends and colleagues.

**New members welcome!**

**WAA HAPPENINGS**

**Be Careful What You Ask For**—The WAA has gone into hyper speed in 2019 with a record number of aspen workshops scheduled, as well as Pando restoration, speaking requests, field visits, and other activities. Still, we wouldn't be here without the deep well of member support and experience. Please consider a donation within your comfort level to maintain and expand our services. Tax deductible contributions are made simple and secure via our [online donation](#) button.

**WAA Publishes Three New Briefs**—Check out our new WAA Briefs addressing Disease & Insect Ecology, Beaver-Aspen Synergies, and Biodiversity in Aspen at the website [link here](#). WAA Briefs are short treatments on the state-of-the-science for topics related to aspen ecology. Briefs are written in summary fashion, but key references are provided for those wishing to dive deeper into topics.

**Pando Restoration Underway**—A flurry of restoration activity is taking place at the Pando aspen clone on the Fishlake National Forest. Expedition: Pando, a volunteer weekend with [Pando Populus](#), saw a diverse group of campers come together to install two deer-proof fence gates so that more people can visit the (so far) successful 2013 enclosure. In addition,



small enclosures are being installed within the Doctor Creek campground and large portions of the upper (2014) enclosure will be rebuilt to further fortify against deer entry. A booster shot of support from [EJF Philanthropies](#) will greatly assist these works.



*Aspen ecology meets sheep-herding, art, and history during the Nevada Aspen Training near Ely, Nevada. Participants made the short hike from Camp Success to a beautiful, healthy, aspen grove replete with a trove of Basque arborglyphs. This particular shepherd apparently came from the French side of Europe's Basque region circa 1930—"Viva la France!" (Photo: Paul C. Rogers).*

**Salmon, Idaho Dedicates Aspen Grove**—On July 23, the city of Salmon, Idaho held a dedication ceremony at the Sacajawea Interpretive and



Educational Center. Director, Paul Rogers spoke on the value of aspen to people, plants, and animals. Three cheers to the City, Idaho Fish & Wildlife

Foundation, Salmon Valley Stewardship, Idaho Fish & Game, and Kelsey Stansberry for their work in making this happen (photos on the WAA Facebook page). Interpretive signs celebrate aspen forests, as well as describe their ecological value to communities.

**Send Your Flashy Photos**—We'd like to post your best aspen photos on the [WAA Facebook](#) site. [Send us](#) pictures that are artistic, unique, ridiculous, or sublime.

### UPCOMING EVENTS

**RTW Explores Restoration & Water Issues**—Wildfires, forest pests, drought stress, outdoor recreation, poorly managed livestock grazing, timber harvesting, and unsustainable development can threaten watershed security, longevity, and system resilience. [Restoring the West](#) will assemble water/land managers and scientists to share guidance, success stories, and research results to ensure that clean water availability is sustained in the Intermountain West. The conference will include two days of plenary sessions and an evening social including a poster session. This conference is organized and sponsored by Utah State University Extension Forestry and USU's Departments of Wildland Resources and Watershed Sciences in the Quinney College of Natural Resources, the Ecology Center, and the Western Aspen Alliance.

**Natural Areas Conference, Aspen Session**—Planning is already underway for the [Natural Areas Association](#) conference in Reno, NV Oct. 2020. Organizers have approached the WAA to head-up a Special Session addressing quaking aspen issues in the West. Stay tuned as details emerge in upcoming *Tremblings* issues.

### **Aspen Workshops 2019**—

- **Wyoming-South Dakota** Sept 17-19: Deadwood, SD. The 8<sup>th</sup> annual Aspen Days will move to the Black Hills region, with Wyoming and South Dakota sharing the program. Contact [Shelly Deisch](#), South Dakota Game, Fish, & Parks for further information. The event is co-sponsored by Wyoming Game & Fish and the WAA.
- **Markleeville, CA Aspen Workshop** Oct. 16-17: Plans are forming now for a late season workshop sponsored by the Bureau of Land Management, WAA, USFS, and state wildlife agencies. If you have interest in participating, contact [Coreen Francis](#), NV/CA Forestry Lead for BLM. Stay tuned to the WAA Facebook page for updates, too.
- **Prescott, Arizona** Autumn 2019: This workshop was settling in on Sept. 25-26 as *Tremblings* went to press. Contact [Mary Flores](#), Prescott NF for information, if interested.
- **Other Aspen Events in Your Area?** Contact the [WAA Director](#) and let us know your plans.

### COMMENTARY

#### **Climate's Cascading Effects In Aspen Systems**

**Thomas E. Martin**, Professor and Senior Scientist, U.S.G.S., University of Montana, Missoula, Montana



Aspen is an unusually important resource for wildlife. It is associated with high primary productivity providing abundant resources that support high biodiversity. It is especially important because its soft inner core that often contracts heart rot provides a favored resource for cavity-nesting organisms. The abundance and diversity of cavity-nesting species using aspen stands exceeds any other habitat type. As a result, maintenance and expansion of aspen stands is important for conservation of biodiversity.

The decline in aspen is well known, but the causes of the decline require investigation. Habitat

conversion is consistently a major cause of loss of many vegetation types, including aspen. The role of fire suppression, drying associated with climate change, and disease have been considered major additional influences. A less-often considered influence is a ‘trickle-down’ effect of climate change acting through ungulates.

Aspen has been declining with little recruitment on the Mogollon Rim of Arizona in areas where fire has been long suppressed and Douglas-fir and differing pine species have dominated. The decline in aspen could be easily attributed to fire suppression and natural succession. However, careful examination of aspen stands shows many young aspen trying to recruit, but being consistently browsed back by ungulates, raising the possibility that ungulates are a cause of the aspen decline. Most of the cavity-nesting birds in this area have declined over time with the decrease in aspen, making it important to understand the cause of the decline.

Ungulates have always existed in association with sustained aspen stands, raising the question of why they should have negative impacts now. The answer, partially, lies in climate change. Snow levels have shifted upwards in elevation over time across mountain ranges of the world associated with a warming planet. Ungulates, like elk, are highly sensitive to the energy costs of moving in snow because of their high weight load to hoof size such that they tend to migrate to lower elevations when snow arrives. Along the Mogollon Rim, reduced amounts of snow have allowed elk to remain over winter in aspen stands where they historically descended from this high-elevation plateau over winter. As a result, they browse aspen suckers year-round and suppress recruitment.

We established three 25 acre exclosures in the fall of 2004 to test whether elk browsing was indeed the cause of aspen recruitment failure. We found that aspen heavily



recruited once elk browsing was inhibited. In the associated picture, taken 5 years after the fences were established, you can see the difference inside versus outside the fence. The only difference is elk browsing. The area was not disturbed or burned, demonstrating that the lack of fire and disturbance was not the cause of aspen decline.

Elk are important game animals and part of many ecosystems. Multi-use management is a delicate balance that has been made more difficult by a shifting spatial distribution associated with climate change affecting snow cover. Understanding these complex ecological interactions ultimately is critical for conservation of aspen and its associated biodiversity.

### WAA Creates

“WAA Creates” showcases artistic aspen-related contributions. We encourage fiction, folklore, poetry, drawings, paintings, photography, and other artistic expressions. [Send your stuff](#) to share with WAA readers.

### **HPP Lodge** (photograph)



### **Rick Braveheart** Flagstaff, Arizona

*This photograph of a cabin set in an aspen grove in northern Arizona captures a forest on the cusp of autumn. The porch chairs are inviting us all to sit, slow down, and take the ‘long view’ on life.*



# TREMBLINGS

NEWSLETTER & BULLETIN BOARD

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## RECENT ASPEN PUBLICATIONS

- Bennett, S., N. Bouwes, and P. C. Rogers. 2019. Beaver and aspen: synergy among keystone species. Western Aspen Alliance. Utah State University, Logan, UT. [WAA Brief #6](#).
- Guyon, J. C., II. 2019. The role of disease & insects in aspen ecology. Western Aspen Alliance. Utah State University Logan, UT. [WAA Brief #5](#).
- Kitchen, S. G., P. N. Behrens, S. K. Goodrich, A. Green, J. Guyon, M. O'Brien, and D. Tart. 2019. Guidelines for aspen restoration in Utah with applicability to the Intermountain West. Gen. Tech. Rep. RMRS-GTR-390. Fort Collins CO: US Department of Agriculture, Forest Service, Rocky Mountain Research Station. 55 p.
- Latutrie, M., E. G. Tóth, Y. Bergeron, and F. Tremblay. 2019. Novel insights into the genetic diversity and clonal structure of natural trembling aspen (*Populus tremuloides* Michx.) populations: A transcontinental study. *Journal of Biogeography* 46:1124-1137.
- Maxwell, J. D., A. C. Rhodes, and S. B. S. Clair. 2019. Human altered disturbance patterns and forest succession: impacts of competition and ungulate herbivory. *Oecologia* 189:1061-1070.
- Merlin, M., and S. M. Landhäusser. 2019. Seasonal patterns of water uptake in *Populus tremuloides* and *Picea glauca* on a boreal reclamation site is species specific and modulated by capping soil depth and slope position. *Plant and Soil* 439:487-504.
- Ratner, J. B., E. M. Molvar, T. K. Meek, and J. G. Carter. 2019. What's eating Pando? Two weeks of cattle grazing decimates the understory of Pando and adjacent aspen groves. Western Watersheds Project, Hailey, Idaho. 33 p. [report.]
- Rogers, P. C. 2019. Biodiversity within aspen forests. Western Aspen Alliance. Utah State University, Logan, UT. [WAA Brief #7](#).
- Sittler, K. L., K. L. Parker, and M. P. Gillingham. 2019. Vegetation and prescribed fire: Implications for stone's sheep and elk. *The Journal of Wildlife Management* 83:393-409.
- Wiley, E., C. M. King, and S. M. Landhäusser. 2019. Identifying the relevant carbohydrate storage pools available for remobilization in aspen roots. *Tree physiology* 39:1109-1120.

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