September 2022

Notes of a Naturalist

A newsletter bringing you the species, landscape, history, and happenings of the Taft-Nicholson Center

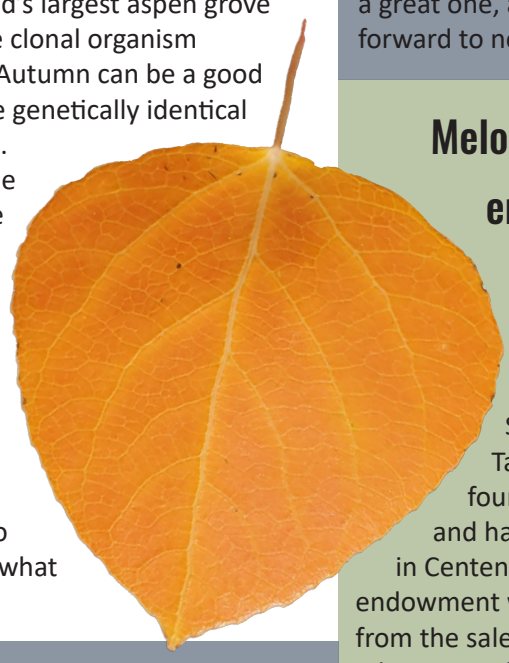
Aspens in Autumn

Fall has arrived, and the aspens are putting on a show. While aspens are far outnumbered in the Centennial Mountains by Douglas firs and other conifers, it's hard to ignore these trees when they start donning their golden leaves. Quaking aspens (Populus tremuloides) are one of the few deciduous trees in Centennial Valley, alongside several species of willows and the occasional cottonwood. Deciduous trees are of course famous for their fall colors. In response to shortening day length, as photosynthesis becomes less efficient, leaves begin to senesce. This begins with the breakdown of chlorophyll, the pigment that is most commonly associated with photosynthesis. This gives other pigments the opportunity to shine, showing off those vibrant colors.

Carotenoids are always present in leaves but are hidden by chlorophyll. Once chlorophyll begins to breakdown, carotenoids give aspen leaves their iconic golden color. Some aspens are also capable of producing other pigments called anthocyanins, which can give them red leaves. Even in aspens that can produce anthocyanins, it takes specific conditions for these red leaves to appear. These pigments are produced in reaction to sugar build-up, which seems to be impacted by weather. Fall days that are warm and sunny are more likely to reveal these brilliant reds. Centennial Valley has had its fair share of warm, sunny fall days this year, and in turn, red leaves have been popping up in the aspen groves.

While the large surface area of broad leaves, like those on an aspen, makes them very efficient solar panels for photosynthesis, they are much more susceptible to damage from freezing temperatures than the wax-coated needles of their coniferous counterparts. So by giving up their leaves in the fall, deciduous trees cut their losses and give up the ability to photosynthesize year-round. But aspens have an extra trick up their sleeve: their bark contains chlorophyll. This means these trees can photosynthesize through their thin, greenish-tinted bark even in the winter, albeit at a much lower rate than their leaves would. This ability allows them to thrive in high-latitude and high-altitude areas where winters can be long and harsh.

Quaking Aspens primarily reproduce asexually. A grove may be made up entirely of genetically identical individuals. In fact, Pando, the world's largest aspen grove that spans over 100 acres in South-central Utah, is a single clonal organism connected by a root system that is over 80,000 years old. Autumn can be a good time to try to distinguish colonies of aspens. Trees that are genetically identical will often by synchronized in the timing of their fall foliage. Because the presence of anthocyanins is a genetic trait, the colors visible within a grove can also be an indicator of the number of different genets, or clonal groups.



Sadly, these iconic golden trees are facing an uphill battle with multi-year droughts and climate change induced heat waves. Dry, hot conditions cause stress to these trees, leaving them more vulnerable to diseases and pests. These damaged aspens don't seem to be replacing themselves with new shoots as readily as they should be. Researchers throughout the Rocky Mountains are trying to figure out the exact causes of Sudden Aspen Decline, and what steps we can take to ensure thriving aspen forests.

Meet the Artist: Sara Tabbert

Sara Tabbert is a print and wood artist from Fairbanks, Alaska. Her work appears in museums, commercial galleries, nonprofit spaces, and as permanent public art installations. Her recent work often explores the natural world and the man-made object, and their interactions within "lesser" yet still wild landscapes. She lives in this kind of landscape, sharing a large parcel of the finest Interior permafrost lowlands with her partner Brandon and a small pack of huskies.

Last summer, Tabbert attended the Center for Furniture Craftsmanship's Furniture 12-week Furniture Intensive in Rockport, Maine, and continues to explore new ways of making work using wood. She is a 2019 Rasmuson Fellowship recipient, a 2021 Artist in Residence in Acadia National Park, and will be a Windgate fellow at the Center for Art in Wood in Philadelphia in the summer of 2023. This summer she will be helping to rebuild her studio following a devastating fire in the fall of 2021, as well as continuing to explore new techniques and ideas in the wood shop in Fairbanks' Folk School.

Lakeview Happenings

We welcomed the College of Science's SRI (Science Research Initiative) team to Centennial Valley over Labor Day weekend. We had a blast hiking up Odell Creek and canoeing Elk Lake with them.

A group from the Osher Lifelong Learning

Institute at MSU joined us for a second time this summer. They toured around the valley to learn from local experts about the ecology, history and future of Centennial Valley.

We're closing up for the season. It's been a great one, and we're already looking forward to next summer!

Melody Taft establishes endowment to support arts programming

With a gift of property, Melody Taft is establishing a $1M arts endowment at the Taft-Nicholson Center. Taft is a founding supporter of the center and has donated her 160-acre ranch in Centennial Valley to the university. The endowment will be funded with proceeds from the sale of the property and will be administered by the director of the center. Earnings on the endowment will be used to support arts programming, including expenses associated with the Artists-In-Residence program and arts programming. Read more here.