

Get Wild: The leaf peepers are coming

Frances Hartogh



Fall colors, as photographed by Eagle Summit Wilderness Alliance Volunteer Wilderness Rangers, are seen in the Eagles Nest Wilderness in Summit County.

Eagle Summit Wilderness Alliance/Courtesy photo

With September's unseasonably warm weather, some of us were wondering if fall weather would ever arrive. But the recent temperature drop — along with those patches of gold springing up among our aspen groves — reassure fall lovers our favorite season is upon us. This year, the official first day of fall was Sept. 22, the fall equinox. What better time to learn more about *Populus tremuloides*, Colorado's iconic quaking aspen.

Did you know that quaking aspens are the most abundant deciduous tree in Colorado, as well as the most widely distributed tree in North America? Their native range extends from Alaska's Brooks Range south to the mountains of central Mexico, and from 11,500 feet in Colorado to the Beaufort Sea. Colorado's aspen forests provide critical wildlife habitat, second only to riparian areas for biodiversity richness.

We all want to know more about those spectacular leaves, but let's focus a moment on aspen bark. Off-white, light gray, or even greenish in color, aspen bark has a superpower — it conducts photosynthesis. Unlike other deciduous trees that lose their leaves in fall and become dormant, quaking aspen bark produces energy year round.



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Quaking aspens have another superpower — multiple ways to reproduce! There are male and female trees, both producing tiny flowers called catkins; pollen from male catkins fertilizes eggs in female flowers, resulting in fruits that split to release cottony seeds. Aspens also reproduce asexually by sending up new stems from a single root system; the entire structure is termed a “clone.” Above ground, the different stems appear as separate trees, but are genetically identical. Trees of one clone change leaf color at the same time.

Aspens' ability to reproduce by sending up new stems enables them to be the first to infill burned, beetle killed or logged areas.

And aspens have a third superpower – super longevity! Although individual quaking aspen trees usually live for about 50 to 60 years, and sometimes up to 150 years, the entire clone can live for tens of thousands of years. In fact, the Pando grove in Utah is estimated to be 80,000 years old, and is the heaviest known organism on Earth.

Now, what leaf peepers have been waiting for – what gives aspen leaves their spectacular fall colors, and when will colors peak? During our sunny spring and summer months, aspen leaves appear green due to chlorophyll, the amazing chemical that allows plants to create energy through photosynthesis. As days shorten, aspens detect the decrease in light. Chlorophyll production slows, allowing other chemicals within the leaves called flavonoids and carotenoids (yellow and orange pigments) and anthocyanins (red and purple pigments) to take center stage.



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Why do certain aspens turn red? For reasons not completely understood, some aspens will create more anthocyanins in cell sap through a chemical reaction of sugars, proteins and light. This reaction occurs only when sugar concentration is high. The role of anthocyanins remains unclear – some scientists think anthocyanins may act as sunscreen, protecting leaves from light damage and extending the time before leaves shed. Interestingly, trees that turn red one year may not turn red the next.

Why is it so difficult to predict “peak” aspen viewing? Several factors enter into the equation: elevation, moisture, sunlight, temperature and tree health. An

early frost can cut the season short, while a dry season will dull fall colors. There's good news for leaf peepers this year: our late-summer monsoon rains, followed by September's sunny days and cool (but not freezing) nights, have created ideal conditions for spectacular colors. Look towards next week for the action to really warm up!



Frances Hartogh

Frances Hartogh is a board member and Volunteer Wilderness Ranger for the [Eagle Summit Wilderness Alliance](#), a local all-volunteer nonprofit that helps the Forest Service protect and maintain the Eagles Nest, Holy Cross, Ptarmigan Peak and Flat Tops Wilderness Areas.