

## From Ashes to Asters

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*AUTHOR'S NOTE: In lieu of Tree Talk, it is my pleasure to bring you this special and timely (post) Fireside Chat.*

While individual trees often make for fascinating stories, every now and then it is beneficial to step back and look at the bigger picture by assessing the forest as a whole. More than one year removed from the great Shawnee State Forest wildfire of April 2009, I believe it is now appropriate to examine the dynamics of fire-adapted ecosystems and how this natural force holds the key to the survival of Shawnee's bountiful biodiversity.

Shawnee State Park and the surrounding Shawnee State Forest comprise over 60,000 acres in remote Scioto and Adams counties. Here lies a cornucopia of plant diversity, a mecca for flora fanatics who flock here to glimpse some of the rarest, most sensitive and habitat-specific plants found nowhere else in Ohio. Affectionately known to botanists and taxonomists as "mega rarities", such super-scarce species include the only known sites in Ohio for gall-of-the-earth (*Prenanthes trifoliolata*), early stoneroot (*Collinsonia verticillata*), wedge-leaved violet (*Viola tripartita* var. *glaberrima*) and silver plume-grass (*Saccharum alopecuroides*). Impressive as it may be, however, this long list of rarities would not be complete without Shawnee's foremost botanical crown jewel, a usually unassuming aster with a neat bit of history behind it.

In 1999, naturalist Barbara Lund rediscovered what is still today Ohio's only known population of creeping aster (*Eurybia surculosa*), an herbaceous perennial wildflower previously presumed to be extinct from Ohio as it had not been seen in the Buckeye State since it was first stumbled upon in 1954 by legendary field botanist Floyd Bartley. The common name of this species comes from the fact that, unlike most asters, it is quite short (6-24 inches) and spreads, or shall I say, "creeps" over an area up to a few dozen square feet with the aid of specialized underground roots known as rhizomes. Though small, this territorial aster, with its rich, pinkish-purple floral rays, creates a striking overall effect in the late summer and early autumn months that would make one question why it has not "caught fire" in the nursery trade.

No one will dispute that Lund's find was the rediscovery of the original population found by Bartley 45 years prior. It was accepted as no coincidence that the actual location of this species, on Forest Road 2, matched the cryptic voucher notes penned by Bartley nearly a half century earlier. This discovery would not be Lund's last as other great plant finds within Shawnee State Forest to her credit include the endangered hairy tall lettuce (*Lactuca hirsuta*) and villous panic-grass (*Dichanthelium villosissimum*) – both of which are also dependant on disturbance for their existence, as are nearly two-thirds of all the threatened and endangered plants in Ohio.

Upon learning of this location in 2006, I have made regular pilgrimages to the site each year. What I find so fascinating about this station is that not only is it believed to be the sole population of creeping aster in Ohio, but moreover, it has the distinction of being the world's northernmost known, naturally occurring site for this truly Appalachian species. Creeping aster is by no means common even in the heart of its limited native range in the Smoky Mountains of eastern Tennessee, but since the habitat in the Little Smokies of southern Ohio is much the same, it is not difficult to see how it could establish here. Obviously, this clonal colony is living life on the edge – the edge of Appalachia that is.

The Shawnee wildfire of 2009 had a dramatic and immediate impact on the area inhabited by creeping aster and its associate dry, upland counterparts. By the time this wildfire was extinguished, 2,964 acres had burned. Intuitively, it would be easy to assume that a fire of this magnitude would wreak havoc on a diminutive species such as creeping aster. This assumption, however, could not be further from the truth. Rather, asters are dependent on regular disturbance for their continual rejuvenation. So after the 2009 fire I wanted to monitor Ohio's only known creeping aster population to observe its response. And what a sight it was to behold. In the past, this elfin aster struggled to reach twelve inches tall, but last summer, husky stems skyrocketed to a towering 22 inches due to the increased availability of sunlight and ready-to-use nutrients widely available at the soil surface – all of which resulted from the influence of fire. Now what if this species was not disturbance dependent? Would it nearly double in size in a single year? I reckon not. This remarkable growth provides clear evidence that fire has many beneficial attributes and therefore necessary for the sustainability of adapted ecosystems such as Shawnee's vast upland oak-hickory forests.

Forests can tell you a lot if only you take the time to look up, down and all-around. Today, a drive along Forest Road 2 within Shawnee State Forest, where the fire was most intense, reveals a young woodland well on its way to a full recovery. Just like the phoenix rising from the ashes, the sight that now greets visitors is one of thriving forest plant life all-around. Seeing a myriad of various asters, oaks, goldenrods and hickories growing in such a vigorous fashion in the years following a fire should put to rest any fears or concerns that periodic burning of these adapted ecosystems somehow impairs their health and quality. The proof is in the plants. Reading into the flora present (otherwise known as site indicator species); particularly after an event such as an intense wildfire, can tell you more than anything else about the health of an ecosystem simply because there is no barometer more reliable than the finicky plants themselves. I like to think of them as canaries in a coal mine, because that is essentially what they are.

Unfortunately, the Shawnee wildfire was found to be an act of arson and I certainly do not condone such egregious acts, regardless of any possible ecosystem benefits. However, this incident clearly shows us yet again that fire is a tool in nature's arsenal and that, in the long run, all species – big and small, rare and common, annual and perennial, mobile and immobile – prosper when ecological balance is maintained. Do not feel as if you have to take it from me alone; the great botanical finds of fire and disturbance-dependant species discovered over the years, offer clear proof of what the science has told us all along. But since seeing is believing, I encourage you to observe this evidence for yourself early next May by attending the 2011 *Flora-Quest* extravaganza ([www.flora-quest.com](http://www.flora-quest.com)), or visiting on your own any day of the growing season, and prepare to be amazed at Shawnee's splendor.