

Kentucky's Uncommon Natural Heritage

by Thomas G. Barnes

Change is both natural and inevitable. Kentucky is changing like never before and at a pace not seen in times past. The pace and speed of development of our landscape is almost unbelievable to the average citizen who does not realize that this state loses between 100 to 160 acres of land every day to development. Forests, woodlands, grasslands, and wetlands close to municipalities, towns, and cities are quickly becoming homes and shopping centers. Add to the development dilemma the other aspects of environmental degradation including pollution, global warming, and invasion by alien plants and animals, and you can quickly come to realize our precious natural heritage is at risk of being lost.



Crawe's sedge (Carex craweii) is a rare species that is in danger of extirpation.
Photo courtesy: Thomas Barnes

How much risk, you ask? Let us take one single example—that of our native plants. At the present time, we have somewhere in the neighborhood of 3,000 plant species that have been documented in this state. Of that 3,000, approximately 15 percent are exotic or alien, and about another 15 percent are considered rare, threatened, or endangered. This leaves about 70 percent of our flora that is native, but that does not mean those plants are safe. As the hemlock adelgid continues to destroy our hemlocks, as the emerald ash borer descends upon the state, as other invasive plants continue to increase and crowd out other species, and as global climate change kicks in, we find that a good many of that 70 percent have the potential to be put at risk. Yes, these are unprecedented times of change here in Kentucky, and the

purpose of this occasionally occurring series is to introduce some of the unique aspects of the biodiversity of Kentucky. Some articles might focus on a single species, whereas others might focus on a unique type of natural plant community. The sole purpose is to showcase the spectacular biodiversity of Kentucky that has the potential to be lost in the future.

Because spring is here, I focus this article on a lovely spring ephemeral wildflower, the glade cress. The Kentucky glade cress (*Leavenworthia exigua*) occurs in Alabama, Georgia, Kentucky, and Tennessee. There are three distinct subspecies or varieties with variety *exigua* occurring in Georgia and Tennessee, variety *lutea* occurring in Alabama and Tennessee, and variety



Kentucky glade cress (L. exigua var. laciniata)
Photo courtesy: Thomas Barnes

laciniata occurring only in Kentucky. The glade cress variety *laciniata*, along with the white-haired goldenrod (*Solidago albopilosa*), are the only true endemic plants found in this state.

An endemic plant is a species that is restricted or exclusively found in a particular location, in this case a state. The entire population of glade cress variety *laciniata* and the white-haired goldenrod resides solely in Kentucky, and their existence is our responsibility. The global conservation status of this plant is critically imperiled as it occurs only on limestone glades (where the soil substrate comes to surface) in Jefferson and Bullitt counties. It is threatened with extinction because of the very issue mentioned above: habitat loss from development in these two rapidly developing counties.

The white four-petaled flower on the glade cresses resembles many members of the mustard family (Brassicaceae). Growing only four to six inches tall, it can be easily overlooked because it flowers in early to mid-March and will stay in flower for several weeks or more. This winter annual has smooth, pinnately lobed leaves with the terminal lobe being much larger or more prominent than the other lobes. The up to 2-inch long leaves are all located at the base of the plant, and the individual white to sometimes light lavender flowers with yellow centers occur on short stalks. These plants can occur in pretty large numbers in the appropriate habitat—open limestone glades that are wet in the spring—but they are also found as individuals or in small clusters. In some cases you can even find this little plant growing in lawns if the native seed bank was not destroyed during development.

There are two additional species of glade cress in Kentucky. The necklace glade cress (*L. torulosa*) is known primarily from Simpson County, and the more common Michaux's glade cress occurs in open glady areas across the state. For more information about the Tennessee glade cress, check out the following link: http://www.naturepreserves.ky.gov/NR/rdonlyres/301CD41A-8321-4E5E-B501-87C4B85A5A47/0/gladecrees_factsheet.pdf.



Eggelson's Violet also occurs in open limestone glades and is considered rare and in danger of extirpation. Photo courtesy: Thomas Barnes

Author:

Thomas Barnes, Ph.D.

Dr. Barnes is an Extension Professor and Extension Specialist with the University of Kentucky Department of Forestry. His specialties are wildlife ecology, biodiversity, wildlife management, and ecosystems management.

Cooperative Extension Service, Department of Forestry, University of Kentucky, 206 T.P. Cooper Bldg., Lexington, KY 40546-0073; E-mail: tbarnes@uky.edu; Phone: 859.257.8633; Fax: 859.323.1031

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