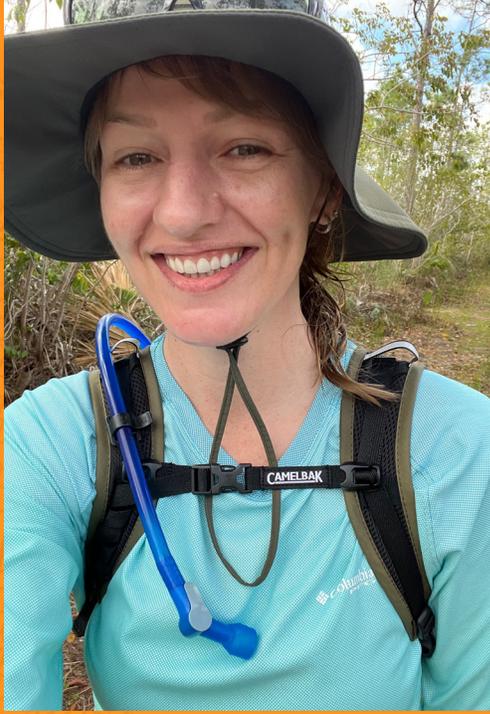


## HELPING PRESERVE FLORIDA'S BIODIVERSITY



Rashelle Deak

### *Dicerandra cornutissima*

Rashelle Deak, a UF/CALS Doctoral Candidate in Forest Resources and Conservation, strives to preserve a rare species of mint in Florida. Deak works in the Crandall Fire Ecology Lab and studies the conservation and management of a mint with the scientific name *Dicerandra cornutissima*. Its common names are *longspurred mint*, *long-spurred balm*, and *Robin's mint*. *Dicerandra cornutissima* prefers sandy soils and an open canopy. It was originally found in two Central Florida counties: Marion and Sumter. Unfortunately, it is currently known to occur in only Marion County, making it the only location the species is found in the world. Deak's research goal is to identify factors that

"I think this is especially true in the North American Coastal Plain, which is known as what we call a biodiversity hotspot. It contains a vast number of endemic species threatened due to habitat loss. My research aims to fill the knowledge gaps regarding effects of fire management and other factors on *D. cornutissima* while potentially informing research on other endangered *Dicerandra*."

### *Conservation Practices*

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Deak in a research location

"I've always been into plants. My porch was lined with all kinds of them during undergrad and I still have some of those same plants over 10 years later. Two of my favorites were *Mimosa pudica* (Sensitive Plant) and a *Coleus* (Black Dragon), which is, oddly, in the mint family. I find it amazing that all these years later I'm researching a rare mint species," Deak said.

limit populations of *Dicerandra cornutissima* to help inform its management and conservation, hopefully preventing its extinction. As with many endangered species in this area, fire suppression and land development have threatened the mint. "I think that my research is important because, in times of global change, conserving what biodiversity we have is imperative." said Deak,

One of the main conservation practices for the endangered mint species is prescribed burning. Prescribed burning is one management practice that landowners can use to preserve open tree canopy that the longspurred mint appreciates so much. Fire surrogates (i.e., mechanical treatments that mimic some of the effects of fire) are also an option.



*Dicerandra cornutissima*



Photo by: Rashelle Deak

## THE URGENT NEED FOR ENDANGERED MINT SPECIES CONSERVATION

The controlled burns help maintain space for *Dicerandra cornutissima*. It is important to be mindful when it comes to burning practices because *Dicerandra cornutissima* is an obligate seeder, which means it does not resprout after a fire, but requires seeds for populations to persist. Fire frequency and seasonality are therefore important to take into consideration to ensure there will be enough seeds. The mint also has an extremely narrow flowering period between the months of September



Photo by: Rashelle Deak

and October. As part of her research, Deak collected data on its demography such as flower counts, height of the longest branch tip, and the number of reproductive versus vegetative branch tips. A branch is reproductive when it has flowers and/or flower buds. Plants are marked with pink flags in several equal-area plots in Deak's Marion County research locations. Deak and her colleagues at the Crandall Fire Ecology lab, in collaboration with the Florida Native Plant Society, conduct annual censuses on the mint during its flowering period. They collect demographic data, such as those mentioned previously. Deak estimated about 700 reproductive branches on one plant. The census allows them to monitor the status of the species and provide foundational data that is used in studies to answer questions about the species.

In conservation research, fire ecologists must be aware of all species that inhabit the area that fire management could impact. In Marion County, the long-spurred mint coexists with the Scrub Jay, a type of endangered bird.

"It's something that we have to keep in mind, and in terms of management, it would be nice to find that one treatment benefits both the Scrub Jay and *D. cornutissima*-that way the FDEP (Florida Department of Environmental Protection) can conserve their resources as well," Deak said.

Florida's ecosystems are diverse yet fragile. As nature is replaced with residential and commercial areas, as Deak discussed, it is important to conserve the biodiversity we still have. The two research locations of the mint populations are bordered with neighborhoods and/or highways. While Deak and other researchers work to develop effective conservation practices, they must be aware of how the conservation practices potentially affect other plants, animals, and people living in the area. Overall, Deak's work aims to ensure that we can preserve biodiversity for generations to come.

*by Shelbi Cooper, University of Florida student*