

Rescuing a Rare Plant Population

Quarterman's Hedge-hyssop is a long-overlooked plant native to the eastern North America, overlooked until described by botanists Dwayne Estes (Austin Peay State University, Charleston, Tennessee) and Randall Small (University of Tennessee) in 2007. This small annual is restricted to ephemeral wetlands that occur on calcareous bedrock; although most populations occur in the Nashville Basin of Tennessee and northern Alabama, there are disjunct outliers in Ontario, Texas, and Illinois. Because of the plants restricted habitat and limited range, this plant is ranked as G3 (vulnerable) by NatureServe, and the Illinois Endangered Species Board lists this plant as 'Endangered'. Many of the rare plants often found with Quarterman's Hedge-hyssop share a similar, fragmented distribution in limestone regions – some of these plants include Leafy prairie-clover (Federal Endangered), Limestone Quillwort (Regional Forester Sensitive Species, Illinois Endangered), and False Mallow (Regional Forester Sensitive Species, Illinois Endangered).



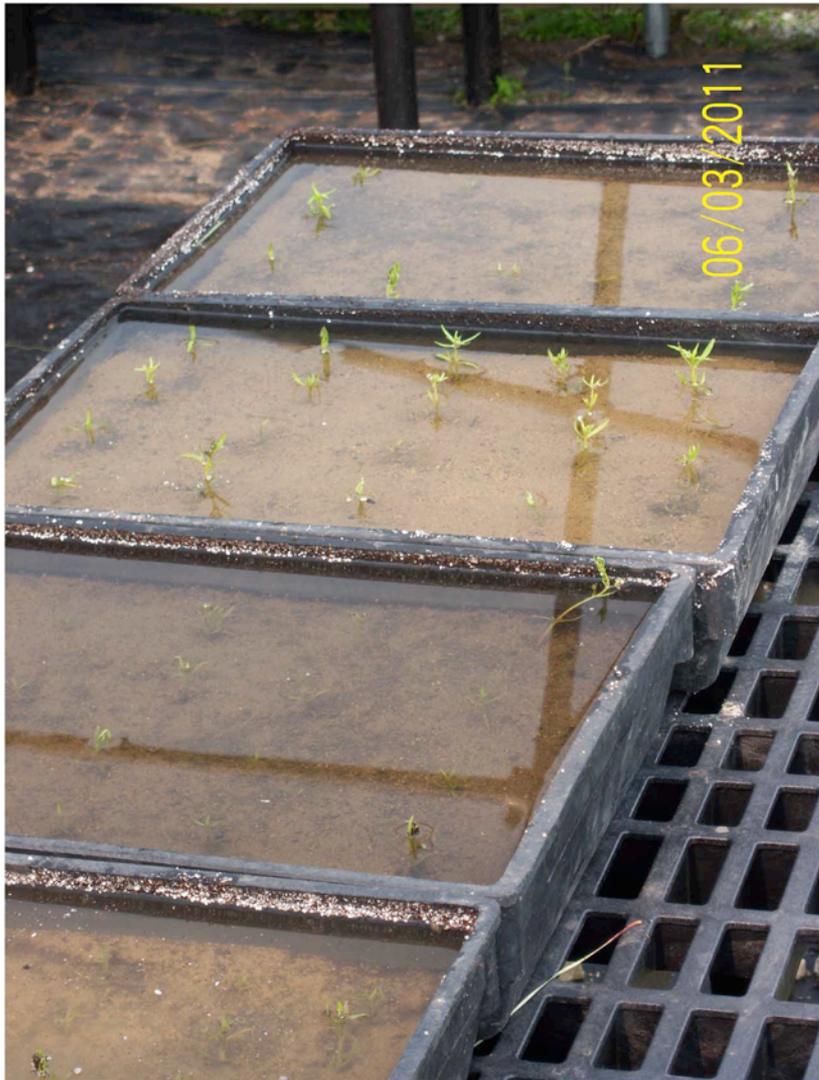
Quarterman's Hedge-hyssop (Gratiola quartermaniae) growing in shallow water on the Durkee Road dolomite prairie, June 2009 (photo by Eric Ulaszek, USDA-Forest Service)

In Illinois, Quarterman's Hedge-hyssop is very rare, with only three sites known – and one of these sites has long vanished, as evidenced by a long overlooked herbarium specimen from the early 1900s. Extant populations were first discovered by Steve Hill, a botanist with the Illinois Natural History Survey, while conducting botanical surveys on and around Midewin. Here Quarterman's Hedge-hyssop is found in dolomite prairie, one of the rarest types of tallgrass prairie, itself ranked as 'imperiled' by NatureServe. Attempts to locate Quarterman's Hedge-hyssop on other protected remnants of dolomite prairie in northeastern Illinois have been unsuccessful, perhaps because so much of this prairie type has been lost to limestone quarries and industrial development. In 2009, Quarterman's Hedge-hyssop was located on the Durkee Road Dolomite Prairie, a privately owned remnant of dolomite prairie. The landowner was not interested in selling or preserving this remnant, but since 2005, has given Midewin staff permission to collect seed and salvage plant material from this site. Over the years, these seeds and plants have been used to restore native plants on appropriate sites at Midewin. As of 2011, over this site has been a source for over thirty species, including three Illinois Endangered plant species and three Regional Forester Sensitive Species.

- In the spring of 2011, Midewin staff learned this site would soon be developed. The landowner again allowed a salvage operation, this time on June 1st, 2011. Although most native plant populations present were now represented in habitat restorations or seed production, Quarterman's Hedge-hyssop was not. And on June 1st, the plants were barely past seedling stage, still a few weeks from flowering, and no seed could be harvested. The young plants were growing submerged, under six-ten inches of water. Midewin staff and volunteers carefully collected approximately 120 young plants (we estimated about 500 were present), and kept them moist while under transport back to Midewin's horticultural facilities.



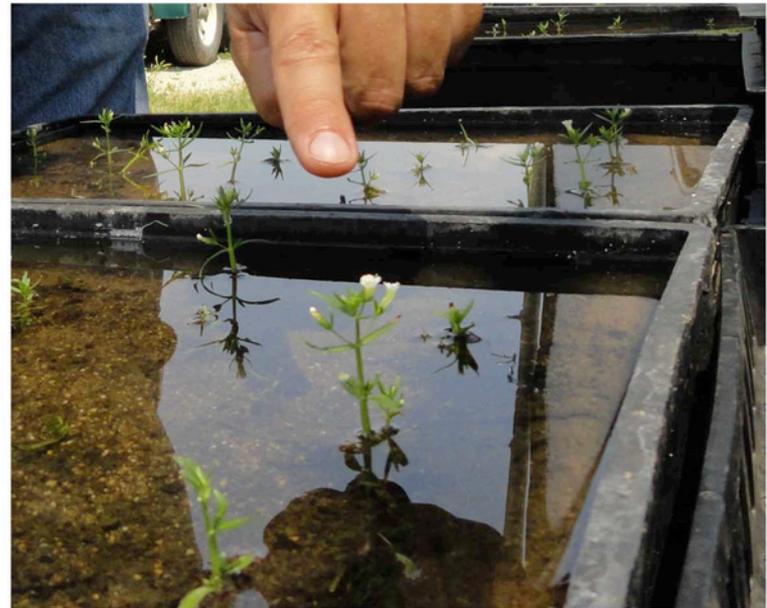
Durkee Road Dolomite Prairie, June 1st, 2011. Gratiola habitat in foreground, volunteers collecting seed in far background. Photo by Eric Ulaszek, USDA-Forest Service.



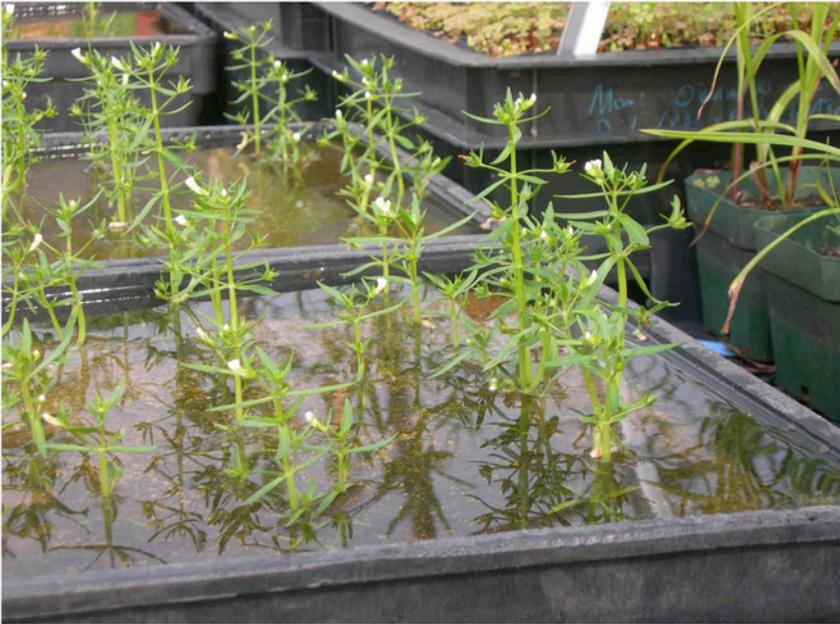
Two days after transplanting, the young Gratiola plants are established in shallow water flats, and the first plants have begun to emerge from the water. Photo by Eric Ulaszek, USDA Forest Service.

The young plants were planted in a shallow layer of soil in flooded flats, and were kept in three inches of water. Within a week, a few shoots and leaves were emerging from the water, and flowers began opening on June 7th. By the end of June, many plants have emerged and now have seed capsules.

The seed from these plants will be used to establish a new population at Midwin, at a site undergoing restoration to dolomite prairie. And a portion of the seed will be sent to the Forest Service's National Seed Laboratory in Dry Branch, Georgia for processing and long term storage.



Rescued Gratiola plants starting to flower one week after transplanting. Photo by Fran Harty, The Nature Conservancy



Rescued Gratiola plants on June 24th, 2011, in flower with developing seed capsules. Photo by Eric Ulaszek, USDA Forest Service.

- Fortunately, the large natural population of Quarterman's Hedge Hyssop on Midewin remains secure, with the Forest Service managing the habitat by removing invasive plants, restoring natural hydrology, and reestablishing native vegetation to degraded areas. Since 2008, this population has been monitored by the Chicago Botanic Garden's Plants of Concern program, which involves volunteers as citizen scientists. This program has allowed increased monitoring of many rare plants otherwise

not possible because of time and staffing limitations on many public lands in northeastern Illinois. Long term monitoring of this population allows the Forest Service staff at Midewin to adapt land management strategies to benefit Quarterman's Hedge Hyssop and other rare plants.

*- Eric Ulaszek, Horticulturist, USDA Forest Service
Midewin National Tallgrass Prairie*



Development of the Durkee Road site began on June 6th, 2011. The materials separation tower on the left has been unloaded on the fill covering the Gratiola population. Photo by Eric Ulaszek, USDA Forest Service