Restoring North Alabama's *Sarracenia oreophila* bogs 2025

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Abstract: During March 2025, 36 people worked to rehabilitate 11 wetlands in North Alabama containing a variety of rare plants. Each site contains species listed as threatened or endangered under the Endangered Species Act of 1973, including *Sarracenia oreophila*. The work was partially funded by the International Carnivorous Plant Society.

In March of 2025, a team of experts and volunteers spent nine days improving twelve sites in three counties in Northeast Alabama. These sites are home to many imperiled photophilic species. Every site managed for this project is home to one of three species listed as threatened or endangered by the U.S. Fish and Wildlife Service under the Endangered Species Act of 1973. Our work area includes nine sites for the endangered Green Pitcher Plant, *Sarracenia oreophila*, two sites for the endangered Giant Whorled Sunflower, *Helianthus verticillatus*, and one site for the threatened White Fringeless Orchid, *Platanthera integrilabia*. The focus of our work is opening the canopy and managing woody regrowth to decrease competition for light at the ground level.

This project, like every year, is held during Auburn University's Spring Break to give the youth of the Delta Chapter of Alpha Phi Omega an opportunity to do something meaningful in the plant community. This year's team was by far the largest, and the weather cooperated to make it the most productive year yet. Thirty-six people collectively traveled thousands of miles to invest 1,011 labor hours on the ground at these sites. We supported seedling plants by clearing their natural bog area through hand removal of brush, trees, last year's leaf litter, and other vegetation, including invasive species. We created new and maintained existing fire breaks and conducted prescribed burning. We also added two new types of activities to the project: augmenting an existing pitcher plant population and outplanting a group of rare oaks grown by The Atlanta Botanical Gardens at a U.S. Forest Service Genetic Resource Management Area.

The year 2025 will be remembered as the year of burning. The group could not have asked for better weather; not only did it provide pleasant working conditions, but fantastic prescribed burn conditions. In 2024, burning was a nearly impossible activity because it rained almost every single day during that year's project. The large group volunteers and ideal weather conditions allowed us to catch up on our burn schedule and add two sites that we had intended to burn for years. While the group could have burned three more sites this year, we decided to hold off and stagger the sites year-to-year so that we will be able to distribute the burning workload across years. We now have a total of six sites which we are managing with prescribed burns.

Despite the weather being the best we have ever had, we still ran into obstacles. There were 18 registered tornadoes on the evening of Saturday, 15 March, which caused a lot of anxiety for the group, surrounding area, and landowners. Thankfully, none of our group or project stakeholders got hurt that day as tornadoes swept through the area killing three people and injuring six. The story could have been very different, and the volunteers were very thankful to have the cabins as shelter that night.

This year, the final steps in a series of nursery upgrades were conducted. The group installed a rain gutter along the side of a barn to catch water and funnel it into a 1,890-liter rain barrel. This system supplies water to a pair of greenhouses where seedling *S. oreophila* are being grown out for reintroduction. It was also noticed that the greenhouse's structural integrity was compromised after years of use. The group went to a hardware store and bought materials to reinforce the greenhouse structure and mend damage. In addition to setting up the irrigation system and repairing the greenhouse, the group prepared four raised beds outside the greenhouses. The raised beds were fitted with plastic liners and backfilled with rocks and freshly prepared potting mix for rearing more *S. oreophila* for outplanting. For this activity, the youngest volunteer at two years old started his journey in plant conservation and made this project a multigenerational project.

In 2015, Ron Determan laid out a plan to fell 10 mature trees each year for a decade at the project's original starting site. This year, in addition to controlling recruitment, expanding the optimal habitat zone, and maintaining the site's fire breaks, we assessed the result of this 10-year plan. We were honored to have Ron Determan return this year to the site. He was very pleased with the success of the group and the revitalization of the Green Pitcher Plant habitat. Like a parent who cannot see how much the child has changed because they live each day with them, the group, who has watched the success year-to-year, gained a renewed sense of success as Ron recounted the state of the site 10 years ago and was amazed at the progress made. He noted that one noteworthy effect the work has had on the site is the noticeable difference in water abundance. As mature trees can take up thousands of liters of water a day, the elimination of those trees has increased the amount of available water in the soil. This creates a habitat more suitable for pitcher plants, orchids, and other species of sun-loving plants native to the mountain bogs of North Alabama.

The group's success has been consistent, but the accomplishments of the prescribed fire this year was exceptional. Of the three sites burned this year, two had not been burned before with our oversight. Each of those two sites presented significant challenges. Because the sites had never been burned, no one in the group was experienced with the site-specific burn management needs. While doable, this introduced added risk to the burns. The success included the safe execution of all burns as well as the amount of available fuels at the sites to be burned. The available fuels, wind speed, and relative humidity allowed for a desirable fire residence time at most of the burns, which should result in death or at least top kill of woody species encroaching the sites.

Site 3 has been managed by the group for four years, and over those years a lot of wood has been stacked and dried around the bog. This fuel load creates risks for the group to safely burn the area. The group this year sought professional help to burn this property. The burn manager brought in expertise, training, equipment, and planning that pushed the capability of the team to another level. In addition to this, the landowner had a pump and tank system on an ATV to extinguish any flames that posed too high a risk of escaping the fire zone (Fig. 1). The burn was conducted with no complications in full accordance with prescribed burn safety standards.

Site 7 posed an entirely different challenge than Site 3. While the team has been managing Site 7 for multiple years, the area is large enough to disperse the fuel in a manner that did not create large fuel caches like Site 3. Challenges for this first entry burn included some large snags that caught fire and the distance and terrain to travel with all the firefighting gear. Multiple water-filled spray packs, shovels, chainsaws, leaf blowers, council rakes, mcleods, and other hand tools were carried over a long rocky terrain to reach the site while the crew was dressed in thick Nomex and 100% cotton clothing. Some large logs required bucking up with the saws to get them reduced to extinguishable

Figure 1. Landowner with a water tank and pump on an ATV at Site 3.

sized pieces. Site 7 was burned with no complications and in full accordance with prescribed burn safety standards (Fig. 2).

Site 5 is a small site on private land that takes little effort to burn successfully as the private owner takes good care of the land parcel and administers burns often. In addition to these three burn sites, the crew helped the state park burn a wildflower trail on state property. We assisted in this endeavor for multiple reasons: First, it strengthens the bond and trust the state park has in us, which is important because multiple project sites reside on their land. Second, the prescribed burn site was in proximity to a historic green pitcher plant site. Finally, the safe application of prescribed fire can be fun when there are plenty of hands to ensure it goes as planned. It is always good to build experience within our team. Every burn should be a learning experience that will be useful as we continue to perform prescribed burns in the future. A lot of the volunteers do not get to have these experiences outside of the project, so helping the state park was an opportunity worth taking.

In addition to a lot of prescribed burning, a unique opportunity arose this year to augment a Green Pitcher Plant site that has been reduced to only 3 plants in recent years. It can often be challenging to line up elements required for seed collection, growing seedlings, and outplanting. In this case, the naturally occurring population, the greenhouses, and the outplanting site all have the same owner. The founder population upstream on the property provided the genetic material utilized in this outplanting. This is another opportunity where the team's youngest volunteer experienced an important part of plant conservation.

Outside of strictly Green Pitcher Plant conservation, the crew annually participates in the conservation of other endangered and endemic species that are in close proximity to the Green Pitcher Plants. These activities include managing a population and an experimental outplanting of Giant Whorled Sunflowers, a population of White Fringeless Orchids, and additional rare and important native species brought to our attention by the numerous plant subject matter experts on the project.

Figure 2. Site 7 was very wet. The site burned slowly and smoky creating a beautifully eerie scene.

The White Fringeless Orchid is next to the Green Pitcher Plants at one site, which is very convenient. The Giant Whorled Sunflower are managed by sending a small crew to them during the management of another site of Green Pitcher Plants on a privately owned conservation easement in Cherokee County. The Giant Whorled Sunflower outplanting is easily managed due to its proximity to the cabins where the crew resides. The crew is able to apply pressure to the persistent threat posed by the nonnative invasive privet that was once found in dense stands around the cabins, nearby boulders, and in close proximity to Site 11.

Another serendipitous conservation opportunity arose this year. The work site in Northeastern Alabama is a short drive from a U.S. Forest Service Genetic Resource Management Area in North Carolina where they manage a seed orchard that is being developed using the Alabama Sandstone Oak, *Quercus boyntonii*, which is endemic to Central and North Eastern Alabama. In a cooperative effort to strengthen the meta collection of this species, the Atlanta Botanical Gardens provided 41 of these rare trees for the volunteers to plant on the U.S. Forest Service property. The alignment of the plant's availability, proper planting season, and a crew sufficient to plant 41 trees was the combination of factors that allowed for this to be added to the list of accomplishments for this North Alabama rare plant task force. The seed orchard is intended to eventually provide acorns for restoration efforts of this rare tree within its natural range.

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