

Seed-Gathering Project- Yearly Report 2023-2024

by Peter Lev (Environmental Committee Chair)

In Spring 2023 consultant Roger Latham sent LRNC a nine-page Short-Term Management plan for Bare Hills Barrens (BHB), the serpentine barrens on the southwest side of Lake Roland. The first item was control of invasive *Miscanthus sinensis*, which we have been working on for several years. Of the several other suggestions, the one that seemed most interesting and doable to me was gathering seeds of several rare plants, propagating in a greenhouse, and then planting the young plants in areas where they do not currently occur. Here is Roger's description of this project:

Gather seeds on site of selected species of greatest conservation need; propagate in greenhouse; plant plugs in suitable habitat in selected restoration areas not yet occupied by species of greatest conservation need.

- Whorled Milkweed (*Asclepias Verticillata*) S3
- Scribner's Witchgrass (*Dichanthelium Scribnerianum*) S2
- Tall Thoroughwort (*Eupatorium Altissimum*) S3
- Annual Fimbry (*Fimbristylis Annuua*) S3
- Woodland Panic Grass (*Panicum Philadelphicum*) SU
- Quill Fameflower (*Phemeranthus Teretifolius*) S2

Note that S followed by a number describes the degree of rarity of a plant. Thus quill fameflower at S2 is the rarest plant on the list, while *Panicum philadelphicum* is degree of rarity unknown.

I checked with Chris Frye at DNR about whether this project required a permit. Chris was concerned about fameflower, but decided that if Baltimore County approved the project I would not need a DNR permit. I requested a research permit from Lake Roland, which was approved. That satisfied Chris Frye.

Over the next several weeks a small group formed to work on this project: Peter Lev, Dwight Johnson, Bill Hilgartner, and Kay McConnell. During Fall, 2023 we gathered seeds from fameflower, fimbry and tall boneset (another name for thoroughwort). We decided not to gather *Panicum philadelphicum* seeds because this plant was abundant in BHB in September. Roger Latham agreed with our decision. We were too late in the year to harvest whorled milkweed and Scribner's witchgrass, so that is a task for Summer 2024.

When gathering seeds, we also immediately planted some in areas of suitable habitat. On one trip Dwight and I gathered fameflower seeds, saving some and planting some. Dwight, Bill, and I did the same thing with fimbry and tall boneset, gathering seeds, saving some and planting some in appropriate habitat. For example, we planted tall boneset in every open area along the Gray Trail.



Dwight Johnson planting fameflower seeds. They are tiny!

We needed a partner with access to a greenhouse. Kay suggested Cylburn, because of the historical connection between BHB and the Tyson family, former owners of Cylburn. I had good connections with the people at Cylburn and so I contacted Brent Figlestahler, known as “Fig,” head gardener for Cylburn Arboretum Friends (CAF). Fig was interested in our project and, with the OK of higher-ups, agreed to help. We brought him the seeds we had collected, which he would propagate-- some in a greenhouse and others outdoors, behind the Cylburn Nature Education Center. The greenhouses at Cylburn actually belong to Baltimore City, with CAF granted some access. So, we cannot expect unlimited access to greenhouses. We hope for cooperation in 2024 and 2025.

Fig had questions about cold stratification, how to expose seeds to cold temperatures so as to simulate winter weather. Roger Latham gave us contacts at Longwood Gardens and Mt. Cuba who had experience growing serpentine plants. Kay volunteered to email Roger’s contacts, and she added a contact of her own at Brandywine Conservancy. With these three sources, we got excellent information about cold stratification and other aspects of how to grow serpentine plants in a greenhouse.

Based on his many years of studying plants in BHB, Bill thinks that fameflower depends on a shallow algal layer in rocky areas in order to thrive. The algae may be pulling needed nitrogen from the air. To experiment with Bill’s idea, Peter, Dwight, Bill, and Kay visited BHB in March 2024 to collect samples of serpentine rock and the algal layer. The next day Kay and Bill picked up a few serpentine pebbles that did not have an algal layer. Kay then brought both sets of rock to Fig at Cylburn. If we try to grow fameflower and perhaps fimbry with and without the algal layer we may be able to prove Bill’s hypothesis.

Roger Latham thinks that April would be the best time to plant plugs from the greenhouse in BHB. Fig said at our last meeting that he feels the plants will not be ready until May. So we will either wait or we will plant a few seedlings in April and other, larger plugs in May.

Some things we need going forward: 1. A better map of BHB. Peter did create a crude map based on an aerial photograph provided by Jeffrey Budnitz, but we are hoping to do better. 2. A system for marking the plots where we plant seeds of plugs. Within the restored meadow we can paint a marker on rocks. In less traveled parts of BHB we can use stakes of some kind but may want to paint on rocks as well. 3. A good GPS system so we can accurately mark the location of all plots. 4. We will need good records of what grows and what doesn't.

For last year's plantings, we did not keep good records but I will mark locations using the map that I have. As noted above, in Fall, 2023 we planted Tall Boneset seeds in the meadow openings on the Gray Trail. We also planted fameflower seeds in the area west of the "Restored Meadow" sign in the large meadow. In this spot, the easternmost cluster of rocks already had Fameflower but all rocky formations to the west did not. And we planted fameflower and fimbry in a few places on either side of the main trail leading down the meadow.

Obviously, marking locations where we plant seeds or plants needs to be improved, and we need to record what grows in these locations as well. One complication is that planting success will vary with the weather. For example, Bill Hilgartner notes that annual fimbry grows better in wet years.

I hope that this project goes forward over a period of years, along with other Serpentine restoration efforts. One sobering factor is that Dwight, Bill, and I are in our 70s, so we will need younger, fitter leadership at some point—probably soon.