

# Meadow Expansion Above the Pond Trail

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During Autumn, the horticulture staff completed the first phase of expanding the meadow above the Pond Trail. There was a small meadow in place with mostly Big Bluestem (*Andropogon gerardii*) and a single Pitch Pine (*Pinus rigida*) on the far edge. Pitch Pine barrens are a rare habitat in our area and thus we tend to pay attention when this species is present. The area adjacent to the existing meadow was a good first step in expanding this space. It was mostly White Pine (*Pinus strobus*) and Gray Birch (*Betula populifolia*), two species that are very common and tend to outcompete Pitch Pine when disturbance (often fire in the natural world) is not present. Underneath we discovered another Pitch Pine as well as Sourwood (*Oxydendrum arboreum*) and Musclemwood (*Carpinus caroliniana*).



Sourwood, *Oxydendrum arboreum*



Jonathan Abbot was unstoppable

We started the project by flagging trees to be kept - Pitch Pines, Sourwood and Musclemwood as well as a Scarlet Oak (*Quercus coccinea*) and a few Gray Birch clumps. The rest of the trees were removed. The seasonal staff spent most of their time delimiting and removing the woody material while I did the actual felling.

After the trees and stumps were removed we used a brush mower and cut three times in succession. The first mow was to simply knock the material down and the

second two were lower and lower with the goal of exposing the soil as much as possible. In most cases it is preferable to mow meadows high (6-8") but in this instance we wanted to expose the soil in order to prep the space for the seed sowing that would follow. We finished by raking the debris to further expose the soil layer.

We've been collecting seed since June and many of our collections were made with this space in mind. For most greenhouse sowing small collections will suffice but sowing seed directly into the soil always results in lower germination so collections must be robust. The soils conditions are sandy, well drained, and lacking in organic matter. Our collections



Doing my best to look like I'm working while Karime does the real work loading the truck

were of species known to grow well in these conditions. Additionally, we collected species that would provide season-long blooms for our local bee populations as well as good forage for native caterpillars and birds. Finally, we were careful to collect species that would mature well together.



Sundial lupine, *Lupinus perennis*

Building a meadow is not a fast process. We expect this one to mature over the next decade or so. A number of the species we included are very slow growing. Species such as Sundial Lupine (*Lupinus perennis*), host plant for the federally endangered Karner Blue Butterfly), Yellow Wild Indigo (*Baptisia tinctoria*, host plant for the Frosted Elfin) and Indian Grass (*Sorghastrum nutans*, host plant for the dusted skipper) will take five to eight years to mature. If these species were planted alone the meadow would fail as non-native weeds would overtake these slow-growing species before they could get established.

Our method for ensuring success was to also include a number of fast-growing native species that can fill in the area quickly and then eventually make way for the slower-growing species. To this end we included the native annual Partridge Pea (*Chamaecrista fasticulata*) as

well as the short-lived perennial species Spotted Bee Balm (*Monarda punctata*) and Black-Eyed Susan (*Rudbeckia hirta*). These species will proliferate in the meadow for the first one to three years and will eventually thin out as the longer-lived species begin to mature.

Additional species included were three separate goldenrods; Downy Goldenrod (*Solidago puberula*), Gray Goldenrod (*Solidago nemoralis*), and Showy Goldenrod (*Solidago speciosa*). Goldenrods provide more ecological value than any other herbaceous species in the northeast. An additional eleven species were included in the seed mix and we expect other



Wild senna, *Senna hebecarpa*

species adjacent to the meadow to make their way in naturally. A number of the species included are rare including the Cape Golden Aster (*Pityopsis falcata*), Wild Senna (*Senna hebecarpa*) and Showy Goldenrod (*Solidago speciosa*). We plan on introducing additional species in future season from plugs grown in the greenhouse.



Partridge pea, *Chamaecrista fasticulata*

The next few seasons will require maintenance as we look out for invasive species which will show up. Mugwort is a major concern and Oriental Bittersweet is all but assured; if we keep on top of these invasives

before they become established we should succeed in creating a space that will resist future invasions.

The meadow we are building will be a slow-growing meadow and maintenance mowing should only be required every 3-5 years once the mature species have established. In the future burning would be preferred over mowing as this would favor the pitch pine habitat that we hope to build here.

Dan Wilder