

# Project Report

## Short-Grass Prairie Creation, Phase 1

Thurston Elementary School / Thurston Nature Center

Submitted by Jim Vallem, TNC Land Steward

November, 2015

## **Introduction**

Thurston Nature Center (TNC) is part of the Ann Arbor Public Schools' (AAPS) property and is used by the district for outdoor science education. It is adjacent to Thurston Elementary School. The center's planning committee is made up of volunteers who plan and execute projects; it is a sub-committee of the Thurston Parent-Teacher Organization (PTO). Thurston is one of the AAPS schools that began a STEAM (Science, Technology, Engineering, Arts and Math) program in 2014. The school's concentration is environmental science, and they call their program Green STEAM to reflect that focus.

In 2009, a 7/10ths acre corner of the school playground was planted with 20 oak trees (Bur, Chinkapin, White and Swamp White), to begin the creation of an oak savanna. The non-native turf grass was left, but was no longer mowed. It was the intention to replace this grass with native plants, but our limited resources were needed for other work. In 2014, we applied for, and received, a grant from the Wildflower Association of Michigan (WAM) to begin this conversion. We are very grateful to WAM for the grant of \$698, which funded the plantings described below.

Because of the size of the area, and the desire to always have habitat for ground-nesting birds in the area, we left the northern half of the area untouched in 2015, with the intention to convert that in Phase 2. Phase 1 was the southern half converted in 2015.

Work on the project was done by Boy Scout Troop 1 led by Eagle Scout candidate Denis Sorel, students from Thurston Elementary, and TNC volunteers.

## **Timeline**

March 21 (TNC volunteers): The southern half of the oak savanna was burned to remove the tall turf grass.

April 26 (BSA Troop 1): After raising some funds, plastic was put down over most of the area to smother the grass. Some areas were missed when we ran out of plastic. Also on this day, cardboard and then wood chips were put down under all the oak trees to smother the grass there.

August 29 (BSA Troop 1): Additional plastic was purchased and used to cover areas missed the first time and where plastic had partially blown off.

October 18 (BSA Troop 1): The plastic was removed and saved for Phase 2. Where the plastic had been down all summer, there was bare soil. However, our concern that the plastic put down in August was probably too late was confirmed. These portions will need to be re-covered and seeded during Phase 2. During this work day, we also planted the shrubs and sowed the grass seeds and a cover crop of winter wheat.

November 16 (Thurston 4<sup>th</sup> and 5<sup>th</sup> grade students): Students gleefully sowed the area with native forb seeds.

November 24 (Thurston 4<sup>th</sup> and 5<sup>th</sup> grade students): Classroom presentation on native plants and their value to the food chain. The students were very enthusiastic about learning about native plants, and participated fully in the discussion.

## Expenses

Shrubs and some forbs (WildType Nursery)	\$82.50
Grass and forb seeds (Michigan Wildflower Farm)	\$593.02
Winter wheat cover crop (Dexter Mill)	\$11.61
Sawdust (Fingerle Lumber, filler to aid in sowing seeds)	\$5.29
Total (excluding Eagle Scout project expenses)	\$692.42

We came in just under budget, by less than \$6. In addition to the expenses above, most of the plastic sheets used to cover the area, and refreshments for the scout troop during their work days, was covered by fundraising done by Denis Sorel as part of his Eagle Scout Project.

We received a few donations that helped with the project: (1) TNC volunteers and Wild Ones members donated a small number of shrubs and seed species from their native gardens; (2) Orchard Hills Athletic Club donated the plastic they had used to cover their two swimming pools the previous winter; (3) The Thurston PTO had some extra sand after filling a play area, which we used to amend the soil where we planted the New Jersey Tea and Leadplant.

## Plants

The complete plant list is attached, along with a page of photos of most of these plants. This information was placed on our Facebook page, attached to a TNC newsletter, and provided to the students who sowed the seeds. WAM's contribution was acknowledged in each communication.

The nature center has many ecosystems, including a tall-grass prairie, but very few short-grass prairie species. We purposely picked plants for this project that we did not already have. Of the 21 forbs, three shrubs and four grasses that were selected, only four forb species already existed elsewhere in the center.

The grasses used were selected for their relative shortness, to make the area seem more accessible to the school's students. The side-oats grama is state threatened.

The shrubs were selected based on their historic presence in oak savannas, and their fire tolerance. The leadplant is listed as a state special concern.

The forbs were all appropriate for the sunny location (the oaks are only about 12' tall currently), but will be able to grow well in partial sun longer-term. They were all placed in an area with the most appropriate soil moisture, as there is a slight grade in the area and one side would be considered wet-mesic. The wild hyacinth is state threatened and the cream gentian is state endangered.

Rather than mix the forb seeds together, we chose to sow each forb species separately to establish natural-looking drift patterns (an idea we picked up at the 2015 WAM conference). The seeds for each forb species were divided into ¼ ounce portions and placed, along with potting soil, in 96 paper bags with the plant names on them. The bags were spread out over the

entire area, and each student got to sow seeds from three or four bags. They were asked to keep their bags until we met a week later in the classroom, so they could mark the seeds they personally sowed on a plant list they would receive then.

### **Educational Value**

The project has both short-term and long-term educational value.

For his Eagle Scout project, Denis Sorel was able to practice fundraising, project planning and leadership. The scouts also learned about the native plants.

The Thurston students who helped sow the seeds learned about the historical abundance of oak savannas in the area, how to tell if an oak grew up in a sunny area or in shade, survival strategies of native plants (such as seed dormancy and deep roots), and why a wide variety of native plants is crucial to the survival of many insects and other animals up the food chain. They also received a list of all the plants placed in the area and pictures of the forbs and grasses. They were encouraged to visit the area in future years to find the species of flowers that they sowed, to instill a sense of pride and ownership.

This savanna will be one of the habitats future Thurston and other AAPS students will study as part of their outdoor environmental education. They regularly go out to find and study land and water insects in the nature center, as well as learn about biodiversity and how the many ecosystems in the center function.

### **Conclusion**

This project adds a short-grass prairie to the other terrestrial and water ecosystems already in the nature center. It allowed us to replace a monoculture of non-native turf grass with a very diverse set of native plants, several of which are listed as rare in the state. As we plan for conversion of the other half of the area next year, we will be looking for opportunities to add more new species.

The project provided another opportunity to work with a local scout troop. We believe we have another future Eagle candidate identified for Phase 2.

The Thurston students who helped were very enthusiastic about learning about native plants, and participated fully, and intelligently, in the discussion. They are looking forward to visiting the area in future years to see the plants, and liked that they were given information to help identify them.

Maintenance in 2016 will include watering the shrubs during dry periods, and mowing the area at least once prior to any weeds setting seed.

We have documented the project on the Thurston Nature Center's Facebook page; three of the posts are included in the photos below.

We want to again thank WAM for their support of this and the many other worthwhile projects which you helped fund this past year.

# Plants Added to Oak Savanna

Forbs (Flowers)	Ht. (ft.)	Sun Exposure				Soil Moisture				Bloom Time					Bloom Color		
		Sun		Shade		W		DM		Apr	May	Jun	Jul	Aug		Sep	Oct
		Part	Full	Part	Full	W	M	M	D	D							
<i>Aquilegia canadensis</i> (Columbine)	2	X		X			X	X	X	X	X						Red +Yellow
<i>Zizia aurea</i> (Golden Alexanders)	3	X		X			X	X	X	X							Yellow
<i>Camassia scilloides</i> (Wild Hyacinth)	2	X		X			X	X	X	X							Pale Blue
<i>Penstemon hirsutus</i> (Hairy Beardtongue)	1.5	X		X			X	X	X	X							Lavender
<i>Lupinus perennis</i> (Wild Lupine)	2	X		X					X	X							Purple
<i>Coreopsis lanceolata</i> (Lance-leaf Coreopsis)	2	X							X	X							Yellow
<i>Tradescantia ohioensis</i> (Ohio Spiderwort)	3	X		X			X	X	X	X							Blue
<i>Penstemon digitalis</i> (Foxglove Beardtongue)	3	X		X					X	X							White
<i>Asclepias incarnata</i> (Rose or Swamp Milkweed)	4	X					X	X									Pink
<i>Asclepias syriaca</i> (Common Milkweed)	3	X		X				X	X	X							Pink
<i>Asclepias tuberosa</i> (Butterfly Weed)	2	X		X				X	X	X							Orange
<i>Pycnanthemum virginianum</i> (Va. Mtn. Mint)	3	X		X			X	X	X								White
<i>Rudbeckia hirta</i> (Black-eyed Susan)	2	X		X			X	X	X	X							Yellow
<i>Allium ce muum</i> (Nodding Onion)	1.5	X		X				X	X	X							White
<i>Chamaecrista fasciculata</i> (Partridge Pea)	2	X		X				X	X	X							Yellow
<i>Dalea purpurea</i> (Purple Prairie Clover)	2	X		X				X	X	X							Purple
<i>Echinacea purpurea</i> (Purple Coneflower)	4	X		X				X	X	X							Purple
<i>Liatris aspera</i> (Button or Rough Blazing Star)	3	X		X				X	X	X							Purple
<i>Gentiana flavida</i> (Cream Gentian)	3	X		X			X	X	X								Cream
<i>Liatris scariosa</i> (Northern Blazing Star)	2	X		X				X	X	X							Plum
<i>Aster sagittifolius</i> (Arrow-leaved Aster)	3	X		X			X	X	X								Blue

Shrubs	Ht. (ft.)	Sun Exposure				Soil Moisture				Bloom Time					Bloom Color			
		Sun		Shade		W		DM		Apr	May	Jun	Jul	Aug		Sep	Oct	
		Part	Full	Part	Full	W	M	M	D	D								
<i>Corylus Americana</i> (American Hazelnut)	8	X		X			X	X										Pink
<i>Ceanothus americanus</i> (New Jersey Tea)	3	X		X				X	X	X								White
<i>Amorpha canescens</i> (Leadplant)	3	X		X				X	X	X								Purple

Grasses	Ht. (ft.)	Sun Exposure				Soil Moisture				Bloom Time					Bloom Color			
		Sun		Shade		W		DM		Apr	May	Jun	Jul	Aug		Sep	Oct	
		Part	Full	Part	Full	W	M	M	D	D								
<i>Bromus kalmii</i> (Prairie Brome)	3	X					X	X										
<i>Schizachyrium scoparium</i> (Little Bluestem)	3	X		X			X	X	X	X								Blue+Tan
<i>Bouteloua curtipendula</i> (Side-oats Grama)	2	X		X				X	X	X								White+Red
<i>Sporobolus heterolepis</i> (Prairie Dropseed)	3	X		X			X	X	X	X								Green+Brown



**Columbine**



**Golden Alexanders**



**Wild Hyacinth**



**Hairy Beardtongue**



**Wild Lupine**



**Lance-leaf Coreopsis**



**Ohio Spiderwort**



**Foxglove Beardtongue**



**Swamp Milkweed**



**Common Milkweed**



**Butterfly Weed**



**Va. Mountain Mint**



**Black-eyed Susan**



**Nodding Onion**



**Partridge Pea**



**Purple Prairie Clover**



**Purple Coneflower**



**Rough Blazing Star**



**Cream Gentian**



**Northern Blazing Star**



**Arrow-leaved Aster**



**Prairie Brome**



**Little Bluestem  
Grasses**



**Side-Oats Grama**

**Preparing for the Burn, March 21**



**Protecting the Young Oaks, March 21**



**Google Maps View, About Three Weeks after the Burn (Before Covering with Plastic)**



**Scouts Covering the Area, April 26**





**Uncovering the Area, October 18**



**Planting New Jersey Tea, October 18**



**Thurston Students Getting Seed Sowing Instructions, November 16**



**Thurston Students Sowing the Forb Seeds, November 16**





### Thurston Nature Center

Published by Jim Vallem [?] · January 30 · 🌐

The Wildflower Association of Michigan (WAM) has just awarded us a grant to cover the cost of native grasses, wildflowers and shrubs to convert 1/2 of the non-native turf grass in our oak savanna to a short-grass prairie. The new plants will be typical of what historically thrived in our area among scattered oaks. We'll be doing this portion in 2015, and completing the other half in 2016. This will be a joint TNC, Thurston Elementary and Boy Scout project.



### Thurston Nature Center

Published by Jim Vallem [?] · March 16 · Edited · 🌐

A week ago, Jim Vallem and Frank Commiskey attended the [Wildflower Association of Michigan](#) annual conference to listen to a multitude of great presentations on native plantings and land/water management, and to accept a grant to cover the plants for phase one of our oak savanna restoration project. Thanks WAM!

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