

# Native Wildflower/Grass Recommendations

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*The following recommendations about planting native wildflowers and grasses are based on scientific research, bulletins published by agency personnel and university professionals who have specific expertise in planting native wildflowers and grasses, and my own experiences planting native wildflowers and grasses and quantifying native wildflower and grass diversity as part of research projects and private sector planting projects in Michigan and Wisconsin. The focus of this document is recommendations for planting native wildflowers and grasses, mainly via seed, on sandy soils in Northern Michigan; many of the same principles apply to other habitat types (e.g., mesic or wet prairies). Regardless of your objective(s), it is important to consult with professionals prior to designing and implementing a native wildflower/grass project. Finally, it is important to note that many of the following topics are debated and still researched, meaning that in some cases there is no single correct answer. It is therefore important to use the best evidence available prior to making a decision about which native wildflowers and grasses to plant and how to plant them.*

## Why plant native wildflowers and grasses?

Many landowners wish to plant native wildflowers and grasses on non-forested upland habitat adjacent to their forests. Their reasons can be variable. For some landowners, the goal is to convert low-quality non-forested habitat dominated by non-native species to a higher quality habitat dominated by native species. In Northwest Lower Peninsula Michigan, a common non-forested degraded habitat is one that is dominated by the non-native invasive forb spotted knapweed (*Centaurea maculosa*) and the non-native invasive grass smooth brome (*Bromus inermis*). Converting such degraded habitats to native habitat results in increased native biodiversity and floristic quality of the plant community, which provides quality habitat for wildlife native to the region. For example, native wildflower/grass ecosystems provide valuable habitat for native pollinators such as Monarch butterflies (*Danaus plexippus*) and native bees (Blaauw and Isaacs 2014). These areas also provide quality habitat for mammalian and avian wildlife species that utilize both the forest and non-forested habitats, or that primarily utilize non-forested habitats (See Large Grassland section of Michigan Department of Natural Resources [DNR] Wildlife Action Plan at [www.michigan.gov/dnrwildlifeactionplan](http://www.michigan.gov/dnrwildlifeactionplan)). Some charismatic avian species that are known to utilize this habitat are Henslow's sparrow (*Ammodramus henslowii*), grasshopper sparrow (*Ammodramus savannarum*), northern bobwhite (*Colinus virginianus*), and bobolink (*Dolichonyx oryzivorus*). Finally, many landowners want to plant native wildflowers and grasses because they are visually stunning!

## Site Selection

There are many considerations when selecting a site to plant native wildflowers and grasses. Generally, it can be efficient to choose non-forested areas where woody vegetation such as non-native invasive shrubs have already been cleared. Other recommendations, from May *et al* (2017), include the following:

- Choose areas that are well drained and that receive full sun for at least half the day.
- Check soil type using the Natural Resources Conservation Service (NRCS) Web Soil Survey at <https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>.
- Choose areas that are NOT within 30 feet of agriculture fields where pesticides are consistently used, particularly neonicotinoids.
- Choose areas that are at least 0.5 acre (this is not always feasible; there is still value in planting native wildflowers and grasses in areas smaller than 0.5 acre).

## Site Preparation

Site preparation is critical! The more effort that is put into reducing non-desirable vegetation (the “weeds”) prior to planting native wildflowers and grasses, the less effort is needed for post-planting weed control. There are multiple methods (See May *et al* 2017 and Xerces Society for Invertebrate Conservation 2013), including mowing/raking + herbicide, tilling, adding cover crops to mowing/raking + herbicide and tilling, solarization, or other combinations of these methods.

The first step with the mowing/raking + herbicide method is to mow or rake weeds during early spring. Then next step is to apply post-emergent foliar herbicides to actively growing (“green”) weeds approximately once per month or every six weeks from late spring/early summer to early autumn, as weeds germinate throughout the growing season. This is an efficient approach for large sites.

Another option that works well is tilling. For this method, the first round of tilling should be done in early spring. Tilling depth should be shallow (less than 12 inches). Tilling should be repeated throughout the growing season, where the idea is to “flush” the weeds by allowing weed seeds in the upper soil profile to germinate; those new germinants are then destroyed by the additional tilling. It is important to till frequently enough (approximately every two to three weeks) so that new germinants are not allowed to produce and disseminate additional seed on the planting site. Weed control of aggressive weeds is the purpose of tilling during this initial stage of site preparation – in subsequent years the beneficial living soil should be left intact.

Cover crops can be planted in conjunction with raking/mowing + herbicide or tilling methods. Cover crops such as rye (*Lolium* spp.) can be planted during the summer after a few rounds of applying herbicide or tilling. A cover crop such as oats (*Avena* spp.) can be planted as an autumn cover crop, after a season of applying herbicide or tilling. Oats will hold the site through winter and winterkill on their own. For cover crop seeding rates, see the NRCS Michigan Common Seeding Table, Page 20, at [https://www.nrcs.usda.gov/Internet/FSE\\_DOCUMENTS/nrcseprd1382441.pdf](https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcseprd1382441.pdf).

Solarization is an option that is best suited for small sites. May *et al* (2017) suggest the following: 1) Mow or rake to clear weeds during the spring. 2) Cover the area with UV stabilized plastic to “cook” the weeds and weed seeds. 3) Remove plastic in early autumn.

Regardless of what site preparation method is chosen, it is important to decide, based on how problematic the existing weeds are, whether to implement a single season or multiple seasons of site preparation. As already mentioned, the more effort that is put into site preparation, the more successful the native wildflowers and grasses will be at capturing the growing space once planted. So, where weeds are a serious problem, two years of site preparation are recommended. Here is one example of a two-year site preparation method that has shown to be successful:

- Year 1, Spring – Begin tilling the site (keep the tilling depth SHALLOW) and repeatedly till throughout the summer each time new weed germinants appear, making sure to till weed germinants before they can produce seed.
- Year 1, Late Summer – Assess whether an herbicide application is needed based on existing weed germinants that have appeared after the previous round of tilling. If germinants are prevalent, apply a foliar herbicide to the germinants.
- Year 1, Late Summer or Early Autumn – Plant a cover crop such as oats to hold the site through winter.
- Year 2, Spring – Assess whether an herbicide is needed based on existing weed germinants that have appeared. If germinants are prevalent, apply a foliar herbicide to the germinants.
- Year 2, Spring – Plant a cover crop such as oats to hold the site throughout the summer and following winter.
- Year 3, Spring – Lightly rake the oat debris so that at least 50% bare soil is exposed. Plant the native wildflower and grass seed.

## Selecting species

In terms of selecting species of native wildflowers and grasses, it is important to first choose an appropriate ratio of native wildflowers to native grasses, depending on goals for habitat. If the main goal is providing pollinator habitat, then a ratio of 75% wildflowers to 25% grasses is common. If the main goal is cover for mammalian and avian wildlife, the ratio of grasses can be higher than wildflowers. A 50/50 ratio of wildflowers and grasses can provide both pollinator habitat and cover. Native grasses that thrive on sandy soils in Northern Michigan include cool season grasses such as junegrass (*Koeleria macrantha*) and warm season grasses such as big bluestem (*Andropogon gerardii*) and little bluestem (*Schizachyrium scoparium*). In terms of wildflowers, it is beneficial to choose a mixture of wildflowers that represent a range of bloom periods. For example, the wildflower seed mixture sold by the Manistee Conservation District (MCD) in 2022 is meant for sandy soils in Northern Michigan and included the following species, representing a range of bloom periods – partridge pea (*Chamaecrista fasciculata*), sand coreopsis (*Coreopsis lanceolata*), purple coneflower (*Echinacea purpurea*), false sunflower (*Heliopsis helianthoides*), wild lupine (*Lupinus perennis*), wild bergamot (*Monarda fistulosa*), foxglove beardtongue (*Penstemon digitalis*), yellow coneflower (*Ratibida pinnata*), black-eyed susan (*Rudbeckia hirta*), stiff goldenrod (*Solidago rigida*), New England aster (*Symphotrichum novae-angliae*), common spiderwort (*Tradescantia ohiensis*), and hoary vervain (*Verbena stricta*).

## Calculating seeding rates

Planting native grasses and wildflowers as plugs (i.e., a young plant along with a soil plug) is a great option, and plugs can be purchased from native plant nurseries and from conservation districts. However, planting plugs is labor intensive and expensive for projects that are at least 0.5 acre. For example, planting plugs on 0.5 acre, at a 12-inch spacing, would require planting 21,780 plugs! For habitat restoration projects where labor and financial resources are limited, planting by seed is the best option.

In terms of planting seed, it is important to first decide on the desired seeds per acre and adjust it to determine the actual seeding rate. For example, using a 50/50 ratio of wildflowers and grasses, an acceptable desired rate is 2.5 pounds per acre of big bluestem, 2.5 pounds per acre of little bluestem, and 5 pounds per acre of native wildflowers, yielding a total of 10 pounds per acre of mixture. Opinions can really vary on this – some organizations recommend much lower seeding rates and other organizations recommend much higher rates. The actual number of seeds distributed on the ground will differ from the desired seed rate, based on the percent pure seed, germination percent, and dormant seed percent from seed tags. Using the desired seed rate

for the native wildflower component of the previous example at 5 pounds per acre, the true seeding rate (the amount actually spread on the ground) will be higher than 5 pounds per acre. For example, if the seed tag (provided by the seed vendor) indicates that the percent pure seed is 98.95%, the germination percent is 55%, and the dormant seed percent is 20%, the ACTUAL seeding rate is calculated as follows: (5 pounds per acre) divided by (% Pure Live Seed = 0.9895 pure seed \* [0.55 germination + 0.20 dormant seed]) = 6.74 pounds per acre ACTUALLY distributed on the ground to get 5 pounds per acre of Pure Live Seed. For more information on seeding rates, see the NRCS Michigan Common Seeding Table at [https://www.nrcs.usda.gov/Internet/FSE\\_DOCUMENTS/nrcseprd1382441.pdf](https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcseprd1382441.pdf).

## When to plant seed

It is also important to decide when to plant the seed. If the goal is to spread the seed in autumn, in Northern Michigan this should occur from November 1<sup>st</sup> to when soil temperature at a 2-inch depth is below 50 degrees Fahrenheit (See the NRCS Michigan Common Seeding Table at [https://www.nrcs.usda.gov/Internet/FSE\\_DOCUMENTS/nrcseprd1382441.pdf](https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcseprd1382441.pdf)). An autumn seeding can be particularly beneficial for seed that requires a period of cold temperature before they germinate (cold stratification). A disadvantage of an autumn seeding is that fluctuating weather patterns can be a challenge – warm spells can cause seeds to germinate, then germinants can die as the severe winter progresses. Autumn can also be a challenge when there is a fast transition from warm weather to heavy snowfall, resulting in a situation where there is not a good window for doing dormant seeding that meets both the temperature and seedbed requirements (although seeds can sometimes be sown on top of snow if there is a low chance that wind will blow away the seed).

Spring planting is also in option. In Northern Michigan (approximately north of U.S. Highway 10), approximately May 15<sup>th</sup> to June 15<sup>th</sup> is a good window for spring seeding (See the NRCS Michigan Common Seeding Table at [https://www.nrcs.usda.gov/Internet/FSE\\_DOCUMENTS/nrcseprd1382441.pdf](https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcseprd1382441.pdf)). For seed that requires a period of cold temperature before they germinate (cold stratification), they may not germinate during the first year, but will germinate the second year (after going through a Michigan winter). Fluctuating weather patterns are not as much of a concern in the spring as in the autumn, but subsequent summer droughts can be a problem.

## Preparing the site at time of planting

By this stage, site preparation methods should have already been implemented, native wildflower and grass species should have been selected, and the amount of seed for the planting area should have been calculated.

One of the next factors to consider is nutrient availability. Assuming that the species of wildflowers and grasses have been matched to the soil type, fertilization is typically not needed, but lime may be needed for adjusting the pH. Just prior to spreading the native seed (within a month prior to when the seed will be spread), it is advisable to get a soil test in order to gauge nutrient availability and pH in the soil. A soil test can be done through a local lab or through Michigan State University (MSU) Extension - visit <https://homesoiltest.msu.edu/>. It is important to remember that excessive irrigation and fertilization actually favors unwanted weeds.

When it is time to spread the native seed, it is important to rake or lightly disk the area (including any cover crop residue), making sure that at least 50% of the area has visible soil so there is good seed to soil contact (May *et al* 2017). The area should then be flattened using a machine cultipacker or lawn roller.

## Spreading the seed

Site preparation has been implemented. Native wildflower and grass species have been selected and the proper amount of seed has been determined. The seedbed has been prepared. The next decision is determining how the seed will be spread.

There are several methods that can be used to spread the seed. The seed can be directly drilled into the ground using a no-till drill that is pulled with a tractor. Hand-operated crank seeders or other mechanical seeders can be used. Or, the seed can be spread by hand.

If the seed is spread using mechanical seeders or spread by hand, it is important to use a carrier to help weigh down the seed (native wildflower and grass seed is very light and can blow away when tossed without a filler). For carriers, common materials include inert materials such as sterile sand, sawdust, cracked corn, or rice hulls. Topsoil (without weed seeds!) and vermiculite are also options. Another option is to use a cover crop such as oats as a carrier – as the oats grow with the native germinants, the oats can act as a nurse crop that can be high mowed to release the native germinants. Whatever carrier is used should be at least an equal or greater volume as the native seed.

When planting the native seed, a general recommendation is to not plant the native seed deeper than 0.25 inch (unlike certain cover crop seed that should be planted deeper). Certain wildflower species are especially sensitive to being planted too deep. Planting depth can be set on a no-till drill. If using another type of seeder or spreading by hand, it is important to flatten the ground before seeding (as already mentioned) and flatten the ground after seeding (using a cultipacker or lawn roller) to ensure good seed to soil contact (necessary for germination). Raking the seed into the soil (i.e., incorporating the seed) then flattening using a cultipacker or lawn roller is also effective, so long as seed is not buried too deep when being incorporated. If the seed is being spread by hand, the following technique should be employed to ensure adequate coverage of the planting area – divide the seed in half, spread one half of the quantity, then spread the other half by walking perpendicular to the path used when spreading the first half.

As far as watering, doing this immediately after seeding is okay (only for spring seeding), but irrigation is typically not needed unless drought conditions persist. Watering can certainly help with germination, but excessive irrigation also promotes the growth of unwanted weeds.

## Initial follow-up work and what to expect

An initial factor to address once the seed has been spread is whether protection from excessive browsing by white-tailed deer (*Odocoileus virginianus*) is necessary to protect germinants as they begin to grow. If such protection is needed, then placing fencing around the planting area (fence height should be no less than 8 feet tall) can keep out white-tailed deer, but fencing is costly. If fencing is not an option, another approach is to spread one or two perimeters of granular bloodmeal repellent around the planting area to deter white-tailed deer and other herbivores (such as eastern cottontail [*Sylvilagus floridanus*])

As far as other initial follow-up work, here is some helpful advice from May *et al* (2017) and Xerces Society for Invertebrate Conservation (2013):

- First growing season – The planting will not look pretty! Try to “high mow” the area back to 6 inches (when vegetation gets taller than 12 inches) frequently enough to prevent weeds (many of which will be annual and biennial weeds if proper site preparation was done) from going to seed. You can also spot spray weeds with herbicide.
- Second growing season – In early spring, rake away the debris. Then, throughout the growing season mow down annual and biennial weeds and spot treat all types of weeds (annual, biennial, perennial) with herbicide if necessary.

As far as longer-term follow-up work, patience and diligence are key factors! According to May *et al* (2017), if by the end of the second growing season more than 75% of the ground cover is weeds, a re-seeding or overseeding should be considered. And patience is key is since native wildflower and grass plantings take years before the results are noticeable. Beginning in approximately the third or fourth years, prescribed fire (if feasible) can be used as a maintenance tool to help rejuvenate the native plant community. If prescribed fire is not an option, mowing every 4 to 5 years in a way that mimics prescribed fire can also be effective. If prescribed fire is used, it is important to consider burning only portions of the area at a time to allow for certain breeding birds to utilize breeding habitat. Finally, an often-overlooked consideration is the incorporation of native trees and shrubs at an extremely wide spacing (minimum 60 feet apart) to provide some additional structural diversity to the ecosystem, such as the diversity found in a savanna habitat with a mixture of scattered woody plants along with native wildflowers and grasses. Native trees and shrubs can be strategically added to the native wildflower and grass community several years after the native wildflowers and grasses have established.

## Native wildflower and grass experimental plots

In 2020 and 2021, Josh Shields and other MCD staff installed experimental plots to examine slightly different methods of planting native wildflowers and grasses from seed. Following is a summary of the progress as of June and July 2022:

\*MCD office, approximately 20 feet by 50 feet area in the manicured lawn area east of the building –

- The area is receiving full sunlight.
- Soil type is a mixture of somewhat excessively drained Coloma and well drained Spinks and Coloma sands.
- 8/4/2020 – The area was tilled (tilling depth was less than 12 inches) using a heavy motorized garden tiller and planted with a cover crop (2 pounds of rye and 0.25 pound of crimson clover [*Trifolium incarnatum*]). The cover crop seed was incorporated into the soil and a lawn roller was used to flatten the area.
- The area was watered with a sprinkler throughout the summer of 2020.
- 9/2/2020 – The area was overseeded with an additional cover crop (3 pounds of oats). The cover crop seed was incorporated into the soil and a lawn roller was used to flatten the area.
- The area continued to be watered until late autumn of 2020.
- 4/28/2021 – The area was tilled (tilling depth was less than 12 inches) using a heavy motorized garden tiller and planted with a cover crop (2 pounds of oats). The cover crop seed was incorporated into the soil and a lawn roller was used to flatten the area. Straw mulch was spread on the planting area.
- The area was not watered in 2021.
- Throughout the summer and early autumn of 2021, weeds growing amongst the oats were controlled as follows – A ready-to-use foliar herbicide containing the active ingredients 2% glyphosate and 2% pelargonic acid and related fatty acids was used to spot treat weeds. Another ready-to-use foliar herbicide (specific to dicots) containing the active ingredients 0.3% 2,4-D, 0.1% quinclorac, and 0.03% dicamba was used to treat larger patches of weeds growing amongst the oats.
- Early May 2022 – A soil test was done through MSU.
- 5/19/2022 – Based on soil test recommendations, 7 pounds of 6-24-24 fertilizer and 5 pounds of 0-0-62 potash was incorporated into the area using a light motorized garden tiller. Six ounces of native wildflower seed, 3 ounces of big bluestem, and 3 ounces of little bluestem, with sterile sand as a

carrier, was spread. A garden roller was used before and after seeding to flatten the area and ensure good seed to soil contact.

- 7/15/2022 – Native wildflower and grass germinants are appearing, but so are numerous problematic non-native and undesirable native forbs and grasses. Of all the experimental plots, the 20 feet by 50 feet plot at the MCD office has the highest percent cover of undesirable vegetation.

\*MCD office, approximately 15 feet by 15 feet area in a fallow field (dominated by smooth brome) west of the building –

- The area is receiving full sunlight to partial shade.
- Soil type is a mixture of somewhat excessively drained Coloma and well drained Spinks and Coloma sands.
- 5/5/2021 – The entire planting area was sprayed with a ready-to-use foliar herbicide containing the active ingredients 2% glyphosate and 2% pelargonic acid and related fatty acids, to eliminate the weeds.
- Weeds were spot treated with the same ready-to-use herbicide throughout the summer and autumn of 2021.
- 11/22/2021 – The area was raked to scarify the soil. Three ounces of native wildflower seed, 1.5 ounces of big bluestem, and 1.5 ounces of little bluestem, with sterile sand as a carrier, was spread. The seed was pressed into the soil by walking on it.
- 7/15/2022 – Native wildflower and grass germinants are appearing, but so are problematic non-native and undesirable native forbs and grasses.

\*MCD 40-acre parcel, approximately 12 feet by 24 feet area in a former log landing area (dominated by spotted knapweed and smooth brome) –

- The area is receiving full sunlight.
- Soil type is excessively drained Kaleva sand.
- 8/6/2020 – The area was tilled (tilling depth was less than 12 inches) with a heavy motorized garden tiller and planted with a cover crop (3 pounds of oats). The cover crop seed was incorporated into the soil and a lawn roller was used to flatten the area.
- The area was watered periodically throughout summer of 2020.
- 5/7/2021 – The area was lightly cultivated with a non-motorized cultivator and rake, and planted with a cover crop (3 pounds of oats). The cover crop seed was incorporated into the soil and a lawn roller was used to flatten the area. Straw mulch was spread on the planting area.
- The area was not watered in 2021.
- Throughout the summer of 2021, weeds growing amongst the oats were spot treated using a ready-to-use foliar herbicide containing the active ingredients 2% glyphosate and 2% pelargonic acid and related fatty acids.
- 5/19/2022 – Two ounces of native wildflower seed and 1 ounce of big bluestem, and 1 ounce of little bluestem, with sterile sand as a filler, was spread. A garden roller was used before and after seeding to flatten the area and ensure good seed to soil contact.
- 7/15/2022 – Native wildflower and grass germinants are appearing, but so are problematic non-native and undesirable native forbs and grasses.

\*MCD 40-acre parcel, approximately 15 feet by 15 feet area in a former log landing area (dominated by spotted knapweed and smooth brome) –

- The area is receiving full sunlight.
- Soil type is excessively drained Kaleva sand.

- 5/7/2021 – The entire planting area was sprayed with a ready-to-use foliar herbicide containing the active ingredients 2% glyphosate and 2% pelargonic acid and related fatty acids, to eliminate the weeds.
- Weeds were spot treated with the same ready-to-use herbicide throughout the summer and autumn of 2021.
- 11/22/2021 – The area was raked to scarify the soil. Three ounces of native wildflower seed, 1.5 ounces of big bluestem, and 1.5 ounces of little bluestem, with sterile sand as a carrier, was spread. The seed was pressed into the soil by walking on it.
- 7/15/2022 – Native wildflower and grass germinants are appearing, but so are problematic non-native and undesirable native forbs and grasses.

\*Landowner parcel in Manistee, Michigan, approximately 10 feet by 20 feet area along a fenceline –

- The area is partially shaded.
- Soil type is excessively drained Grattan sand.
- 4/24/2021 – The area was tilled with a non-motorized garden tiller. A metal rake was used to clear the tilled biomass. Four ounces of native wildflower seed, 4 ounces of little bluestem, and 4 ounces of big bluestem, with sterile sand as a carrier, was spread. Straw mulch was spread on the planting area. The seed was pressed into the soil by walking on it.
- 4/30/2021 – Two ounces of native wildflower seed, 2 ounces of little bluestem, and 2 ounces of big bluestem, with vermiculite as a carrier, was overseeded.
- The area was not watered in 2021.
- Throughout the summer and early autumn of 2021, weeds (which were quite prevalent) were hand pulled or mowed.
- By early autumn of 2021, native wildflowers were prevalent and dominated the planting area (percent cover of planting area occupied by native wildflowers exceeded 60%), but native grasses were not present.
- 11/20/2021 – Three ounces of native wildflower seed, 1.5 ounces of little bluestem, and 1.5 ounces of big bluestem, with sterile sand as a carrier, were overseeded.
- The site will be visited in 2022, pending permission from the landowner.

\*Landowner parcel in Merrill, Michigan, approximately 2 feet by 100 feet area along a property line and in what is otherwise a manicured lawn –

- The area is in full sun.
- Soil type is poorly drained Parkhill loam.
- Scattered native trees and shrubs have also been integrated into the planting area. Species include eastern redbud (*Cercis canadensis*), common ninebark (*Physocarpus opulifolius*; the “nativar” with purple leaves), and redosier dogwood (*Cornus sericea*).
- 5/8/2021 – The area was tilled (tilling depth was less than 12 inches) with a small motorized garden tiller. A metal rake was used to clear tilled biomass. Two ounces of native wildflower seed, 2 ounces of little bluestem, and 2 ounces of big bluestem, with vermiculite as a carrier, was spread. The seed was pressed into the soil by walking on it.
- The area was not watered in 2021.
- Throughout the summer and early autumn of 2021, weeds (which were quite prevalent) were hand pulled or mowed, or spot treated with a ready-to-use foliar herbicide containing the active ingredients 2% glyphosate and 2% pelargonic acid and related fatty acids.
- 9/19/2021 – Particularly problematic patches of weeds included patches of foxtail (*Setaria* spp.) and corn (*Zea mays*; source of seed was from adjacent bird feeder). These areas were mowed down with a battery-operated weed whip.



- 11/25/2021 – Any green patches of weeds were mowed down with a battery-operated weed whip. Three ounces of native seed (1 ounce of wildflowers, 1 ounce of little bluestem, and 1 ounce of big bluestem) were overseeded.
- 6/4/2022 – Native wildflowers are prevalent and dominating the planting area (percent cover of planting area occupied by native wildflowers exceeds 60%), but native grasses are minimal. Problematic weeds are also still prevalent in patches, including ground ivy (*Glechoma hederacea*), Kentucky bluegrass (*Poa pratensis*), and quackgrass (*Elymus repens*).

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