



Transitioning from Traditional Lawn to Native Planting

by

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SITE SELECTION & BORDER OPTIONS

Think about Existing Conditions and Your Yard Goals

- What areas of lawn have you not been using for kids, pets, or other purposes?
- Besides lawn, are there other unused parts of your yard where there's weeds or invasive brush?
- Are there areas where you've had trouble growing lawn or other plants?
- Are there areas where you really don't like the existing vegetation and would like to start fresh?
- Would you like more privacy along a certain border?

Plan and Define Your New Edges

- Get some garden hoses and lay them out to help visualize the future edges of your native planting.
- Avoid right angles and sharp turns because they're hard to mow around and you'll likely retain some lawn edges, even if they're just walkways.
- Smooth, flowing curves tend to look nice.
- Leave the hoses in place and look back at them regularly for at least a week to make sure you like the lines you've created.

Border Options: Metal/plastic edging, trench or "mowed" line?

- Border selection is personal preference but also depends what will be on the other side of your native planting and how big of an area you're planning. If you have the time and energy as well as a little extra cash, put in a physical, defined edge, but it's not required.
- Spray-paint a line along your hose if you want a physical border (otherwise you can herbicide the line along your hose, as described in "Site Preparation".)
- Call Digger's Hotline at 811 to search for underground utilities.
- Rent a "bed edger" and pull it along your paint lines to create a nice, clean trench.
- If installing plastic or metal edging, measure your linear feet and pick some up. The edging will slide right down into the trench where you can stake it in place and backfill with the excess soil piled up by the edger.



Instead of fence-to-fence lawn, consider installing native mixes around your yard's perimeter to create privacy and habitat.

SITE PREPARATION

Native planting success – and limited maintenance – depends on good site preparation! Site preparation means removing any undesirable existing vegetation to create an open bed where the seed can easily contact the soil surface.

If you're restoring directly out of lawn, especially a lawn that's been chemically treated for weeds, this process is particularly easy and can be done in a single season. If you're including areas where you've had many years of other vegetation growth, then you need to give yourself at least a year to assure you've sufficiently killed off invasive weeds like Canada goldenrod, thistle, reed canary grass and others that would compete with your native planting. You can find more resources for invasive weed identification and control at the end of this guide.



Kill all undesirable vegetation.

Herbicide Treatment to Prepare the Native Planting Area

- Purchase a 1 or 2-gallon herbicide tank sprayer and some concentrated (not pre-mixed) glyphosate herbicide. Glyphosate is a full-spectrum herbicide, meaning it will kill both grasses and broadleaf plants.
NOTE: Although it has become controversial, glyphosate represents a critically important land restoration tool, particularly for the site preparation phase of projects. Non-chemical alternatives like smothering large areas are infeasible for large projects and can also be damaging to the site and native species we want to maintain.
- You may also want to purchase some “laser blue” marker dye as shown in the photo to the right. It's non-toxic and will allow you to see exactly where you've sprayed.
- Wear long sleeves and pants, then gather personal protective equipment including glasses, chemical-resistant gloves and (ideally, though not required) rubber boots.
- Read and follow all manufacturer's instructions. In general, you will add a bit of water to your spray tank, test your tank and your chosen applicator tip (likely the “fan”) to make sure it works well spraying water, and then return to your sink to add the prescribed amount of herbicide and marker dye before filling your tank with water as needed.
- Make sure the vegetation you wish to remove is dry (no dew or recent rain), that there's not too much wind, and that no rain is expected for at least several hours. Also make sure this vegetation is healthy and hasn't gone dormant due to drought or seasonal change; if so, you'll need to wait because your herbicide application won't be effective unless the grass or weeds are green and growing.
- Head out to your planting site and spray all herbaceous vegetation you wish to remove. Do NOT dump any extra herbicide down the drain! Any excess should be stored for later use, disposed of through your municipality, or sprayed off on appropriate target vegetation.

NOTE: If you also want to plant into an area that's currently brushy, first identify and remove all non-native brush. Cut the stumps and immediately paint the cut ends with undiluted glyphosate or another commercial brush killer (like pictured below) to prevent resprouting.



Stumps treated with herbicide, indicated with marker dye, to prevent resprouting.

Preparing Your Seed Bed

- You will see the effects of the herbicide application within about 10 days. If after 2 weeks you're still seeing green, re-treat any areas you missed.
- Within about 3 weeks, much of the grass and existing vegetation will be disintegrating and you'll likely start to see some bare soil through the thatch layer.
- Use a metal garden rake to remove any excess vegetation that's easy to pull away.
- Ideally, you'll now have a reasonably bare surface, but you can further refine your seed bed by using a dethatching rake (see photo below) to expose as much soil as possible by removing the dead thatch. You don't need to dig or till, but you should be able to see soil across a good percentage of your site.
- Continue to watch for and treat weeds prior to sowing your seed.

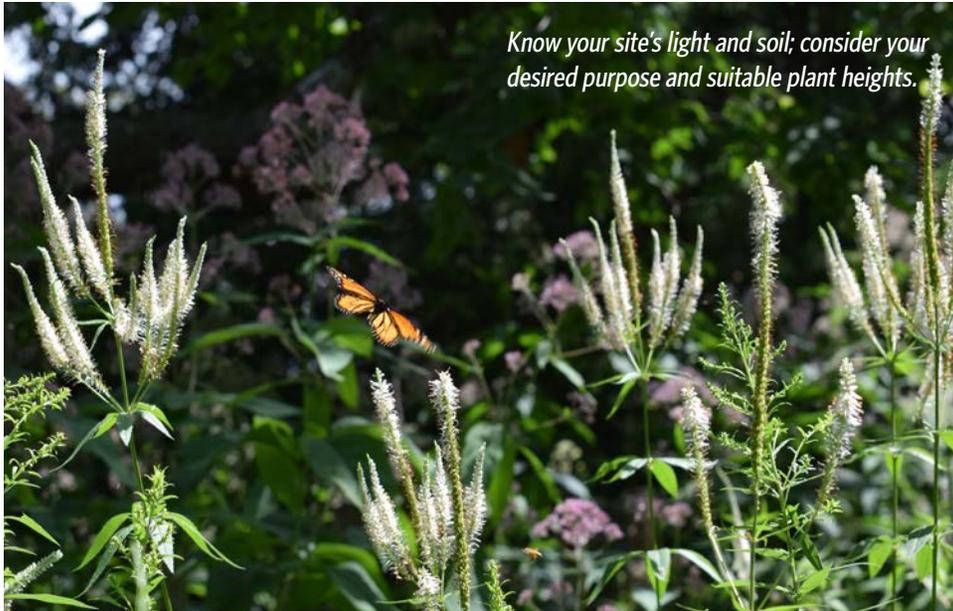


Prepare your seed bed and install your mix.

SEED MIX SELECTION | LIGHT & SOIL; HEIGHT & PURPOSE

Light

- In general, southern and western exposures will receive the most sun, while eastern and northern exposures will be shadier.
- Also, 8 or more hours of sun is “full sun” while 4 or fewer hours is likely “shade.”
- Analyze your selected site and estimate how many hours of sun it receives.
- If some areas are shadier than others, pound in some wooden stakes to delineate the edges of the different light zones; this can just be general – don’t get hung up on the exact hours in each area; just get a sense of where it’s most sunny vs. shady to help in selecting the right mix or mixes.



Know your site's light and soil; consider your desired purpose and suitable plant heights.

Soil

- Clay soils are composed of tiny particles packed close together and they don't drain very well because water has trouble finding its way through. Conversely, sandy soils tend to have large grains that allow water, nutrients and other substances to quickly infiltrate.
- If you want to better know your soil type, conduct two tests:
 - 1) Dig a hole about 12" wide by 12"-18" deep and fill it with water. Record the time. Check back a couple hours later. If you still have water in the hole, you've got a fair amount of clay in your soil. If you still have water in the hole the next day, you have a LOT of clay in your soil.
 - 2) Take a wad of soil that you've dug out of your hole. Moisten it with water and work it into a snake shape in your hand – if you can. Assuming you have a lot of clay in your soil, you'll be able to mold this soil into a shape; when rolled between your hands, it won't break apart.
- If you want to know more about your soil, mail a sample to a university soil lab or private lab to find out details like nutrient and organic matter content and pH. Many labs can also test for contamination by heavy metals or salt. Unfortunately, most home test kits aren't particularly reliable.

Height and Purpose

Native plant mixes are developed to serve many different purposes and as such, many are classified into different height categories. A few of the key purposes you will see as you peruse mixes in catalogs or online are as follows:

- Pollinator mixes with lots of flowers required by butterflies, bees, and other pollinators for their various life stages
- Bird & Wildlife mixes include lots of flowers, grasses and other wildlife food and shelter plants
- Restoration mixes designed to mimic natural plant communities/species assemblages of a given area
- Low-Growing Prairies for Urban Areas selected to not swamp sidewalks and other high use zones with very tall plants
- Woodland Edge/Savanna Mixes for mixed light planting areas with sun and shade
- “No-Mow” or “Low-Grow” lawn mixes – usually a blend of native fescue grasses that stay reasonably short and don't need regular mowing

Think back to how you answered the initial questions about what you want to get out of this project as well as your soil and light limitations. If you want to create privacy, consider mixes that are described to be taller. If you want lots of flowers, consider a pollinator mix. If you have limitations such as dense shade, then look to a woodland mix. If you have height limitations such as along sidewalks or streets, choose a mix with shorter plants under 3' high.

Regardless, chat with the seed company to assure their mix will work for your purposes and site conditions. They will be helpful in letting you know if the mix you've selected will be okay in clay soils, or whether some species should be swapped out for others better suited to your needs and conditions.

For example, I chose a “Low Growing Prairie for Clay Soils” for my pocket prairie planting along sidewalks. However, a few of the species in the mix would have gotten closer to 4' and that was too high for my site, so the nursery swapped in more short species at no charge. I also have two Norway Maple trees within this planting site. These are non-native trees with extremely dense shade and to accommodate this limitation, I also ordered a small amount of a woodland edge/savanna mix to plant under and around these trees in the areas that don't get (nearly!) as many hours of sunlight as the rest of my site.



Mix your seed with moist inert material like sand/sawdust/vermiculite/rice hulls.

Try to buy from a local seed company because they'll have seed sourced from local native plants. The closer the native seed source is to your area, the better success you'll have.

Avoid purchasing generic "wildflower" or "pollinator" mixes sold in online marketplaces like Amazon or Etsy. These mixes often contain invasive weeds and even the true wildflowers in the mixes won't be sufficiently local to your area.

Measure the square footage of your native planting site, determine your seed mix or mixes, and order an appropriate amount of seed. Do not over order - the mixes are carefully designed for coverage and so you don't need to put down an excess for success; it would waste money and your results may not be as good. If you ultimately want to add diversity to your planting, wait a few years and put down more seed of some species you didn't originally introduce, ideally after you've burned your site, or at least cut down the taller vegetation and raked off leaves and thatch.



Just the right height!



Lounging on a "No-Mow"/"Low-Grow" lawn.

One final consideration: If you will be planting your seed on a slope, you may consider mixing in a little annual rye as a cover crop. This grass species germinates very quickly and puts down roots to hold the soil, and your native seed, in place as the native species take longer to germinate, grow, and stabilize. The grass is an annual, so this means it will die off over winter, unless our winter is particularly warm as is sometimes now the case with climate change. The seed company can help you determine the right amount of rye or another cover crop for your situation.

PLANTING & STABILIZING

Now that you've done the hardest work of preparing your site and you've ordered your seed, you're probably excited to plant. I recommend planting your native seed in the late fall/early winter and ideally just before it's going to snow, or even after a light snow. By sowing seed onto bare ground during the dormant season, you're letting the freeze/thaw action of winter help you create optimal seed-soil contact and you're setting your seed up for success because the spring rains will keep it good and moist as it germinates and begins to grow. Furthermore, by planting just before a snowfall, your precious seed will be safely covered and packed down so less will be eaten by animals or blown away. Finally, many of our native plant seeds need a period of cold, moist conditions to germinate, so a late fall/early winter planting meets this need.

Planting

To ensure you spread your seed evenly across your planting area, follow all instructions provided by the seed company, which will generally involve these steps:

1. Purchase or collect some inert material such as sawdust, sand, vermiculite or rice hulls.
2. Mix a large quantity of inert material with all your native seed for a given planting zone.
3. Lightly moisten all of the material and mix thoroughly. Native seeds come in many shapes and sizes and this mixing process ensures that the big seeds are well mixed with the small seeds so you don't end up with just the small seed at the bottom of the container.
4. Split your full mix into several smaller containers.
5. Take a smaller container and try to evenly spread that seed over your whole planting area and repeat the process with the other containers until all your seed is gone. Using multiple containers insures you don't accidentally spread all your seed over only part of your planting area by putting down too much in one spot.



Erosion mats installed on slope after native seed was installed underneath. Young plants will grow through the mats.

Stabilization

If you're planting on a slope or in an area where water channelizes and flows, you'll have an added step to protect your seed and soil: Erosion mats. Erosion mats/blankets can be made of many things but most commonly, they're comprised of a thin plastic net layer and an organic layer of clean straw or thin wood shavings. These are the big rolls of material you see along highways after construction.

The photo at right shows a garter snake basking on some natural fiber erosion mats. Totally biodegradable natural fiber mats without a synthetic plastic net are really important for protecting snakes, which frequently tangle and die in the plastic netting. These mats like you see here do a great job of holding soil but also allow critters to wiggle through them.

If you do use mats with plastic netting, the size of the plastic grid matters and I recommend a grid of about 1" squares, which are big enough for larger native plants to push through. Standard plastic netted mats have ½ squares that are only suitable for grasses.

Some of the plastic netting products are photodegradable, so they will break down, but not all, so I really recommend you look for that feature if you go with plastic.

No matter which mats you choose, you'll also need a box of metal landscape staples to secure the rolls to the soil.

One other note: You may decide to cover your planting with loose straw if you want a little extra protection but don't want to go through the work and expense of erosion mats. If you don't have steep slopes or water channels, you may get away with this, but it's usually not necessary, especially if planting as it's starting to snow. Regardless, if you are going to cover your planting with straw, be sure you're using clean oat or wheat straw and NOT hay. Hay will inevitably have weed seeds in it and your site preparation efforts will have been wasted in part. Also make sure you're not spreading this material too thickly.



A garter snake basks on biodegradable, natural fiber erosion mats that are safe for little critters, unlike plastic netted mats that can trap and kill them.

MAINTENANCE | YEARS 1, 2 & BEYOND

Assuming you plant your seed during the fall/winter dormant season, your Year 1 will start the following spring when your seed germinates and begins to grow into tiny plants. No matter how well you've prepared your site, you can expect at least some weeds, and weeds grow big very fast, particularly because most of them are annuals or biennials. Annual plants (like ragweed) need to germinate from seed, grow to maturity and produce new seed all in the span of one season. Biennial plants (like garlic mustard, burdock, and Queen Anne's lace) take two growing seasons before the parent plant produces seed and then dies off permanently. Perennials are plants that come back year after year.

Your first two years of maintenance are all about ensuring that no weeds go to seed and also that weeds don't outcompete your tiny new plants for space, light and water. The vast majority of native prairie or woodland plants you will be planting are perennials well adapted to our climate conditions with a high drought tolerance due to deep roots. During the first year of growth, these plants remain quite small above ground because they're putting their energy into developing those extensive underground root systems.



During Year 1

Plan to keep your native planting area mowed to a height of 6" and certainly no more than 12" tall. For typical urban planting areas, a weed whacker/string trimmer works well. Assume that you will trim your planting area to a height of about 6" at least three times during the first year. This regular trimming will ensure no weeds go to seed - thus stopping the life cycle of annual and biannual weeds - and will also ensure that your tiny new seedlings have enough space and light to keep growing large enough to out-compete the weeds in Year 2 and beyond.



July 2018

During Year 2

Plan to trim back your native planting area to a height of 12" at least once or twice. By this time, you'll be starting to see some native flowers like black-eyed Susans and it can be hard to cut them off, but enjoy them in a vase! By keeping your planting area trimmed this season, you'll be helping the slowest growing native plants get big enough to compete and so in the end, you'll end up with a more diverse planting. As you can see in the photo above, I didn't do a good job of keeping my whole prairie trimmed in its 2nd year, but I did carefully clip or spot spray any weeds throughout that season so none could set seed.



April 2019

By Year 3

Your planting is mature enough to burn! Ideally, you'll go through the steps to get a local burn permit and work with your neighbors to burn your planting in March or April of the third year. Burning is not required. If you can't burn or don't want to bother, then this is a really good time to mow your planting as short as possible and rake off the debris for composting. You can also burn or mow in the fall though leaving your planting intact for winter provides valuable food and wildlife habitat. By burning or mowing, you set back the process of natural succession, which basically means you're clipping off/scorching any tree or shrub seedlings that were starting to grow. If you're burning, you're also returning important nutrients back to the soil to nurture your planting.

In Years 4 and 5

Your planting will continue to mature and you'll likely see some new species flower in each of these years. Many owners get into a cycle of mowing off or burning a portion of their planting every 2-3 years. By only mowing/burning a portion, you leave a separate portion for insects that overwinter in the stalks of various plants; the unburned areas are "refuges" for these species.



July 2020

Although your mature planting will be pretty resilient in outcompeting weed invasions, you'll still need to keep an eye out for invasive weeds and take appropriate action depending on the species. Annuals and biennials are easily pulled out when the soil is moist after a rain or can simply be kept trimmed short so they can't set seed before they die. Many perennials can also be pulled out when the soil is moist, but if you decide to pull, you're disturbing your soil, which can harm small adjoining native plants, or bring more weed seeds to the surface.

There are a few weed species like reed canary grass, Canada thistle, bishop's weed and crown vetch that would require a targeted herbicide treatment because they have rhizomatous roots that enable the plants to spread rapidly underground. Plants with this type of root system can't simply be pulled or dug out; you'll always have more coming back up because every piece of root fragment can start a new plant. When it comes to targeting these weeds in a mature prairie planting, consider a variety of targeted herbicide treatment methods, including "wicking," and research the most appropriate chemical for your problem species. Many herbicides have been developed to target only certain types of plants so that you don't accidentally kill off plants you want to keep.

INVASIVE PLANT RESOURCES

Unfortunately, invasive plants are just about everywhere and they represent the second most significant threat to biodiversity after habitat loss. We all have a role to play in removing these species from our properties and thankfully, there's a lot of great resources to help.

First and foremost, check out the Midwest Invasive Plant Network at mipn.org for the most up-to-date information with links to identification and control resources for both woody and herbaceous invasive plants commonly found in our area.

As a quick, partial, reference here, check to see if your property has any of the following woody invaders:

Amur honeysuckle	Cattail (narrow-leaved & hybrid)
Asian bittersweet vine	Honeysuckles (Eurasian, Japanese, Morrow's, Tartarian honeysuckle & x. Bell's)
Autumn olive	Multiflora rose
Barberry (all)	Privet (common & border)
Black locust	Russian olive
Burning bush	Tree-of-heaven
Buckthorn (common & glossy)	

The Woody Invasives of the Great Lakes Collaborative has a great website tailored to tackling these and other woody invasives in our landscapes at woodyinvasives.org/management/



Barberry: With their spread aided by birds eating the berries, these popular non-native ornamental shrubs are incredibly damaging to natural areas and should not be planted for any reason. Research has shown that when barberry infests an area, parasitic ticks that can carry human diseases are more prevalent.

The most common herbaceous invasive plants found in our region are as follows:

Bird's-foot trefoil	Japanese stiltgrass
Black swallow-wort	Leafy spurge
Bishop's weed	Poison hemlock
Burdock	Purple loosestrife
Creeping bellflower	Quackgrass
Canada goldenrod (native but extremely aggressive in disturbed areas)	Reed canary grass
Crown-vetch	Sericea lespedeza
Curly dock	Spotted knapweed
Dame's rocket	Sweet clover (white & yellow)
Field bindweed	Tansey (common)
Garlic mustard	Teasels (common & cut-leaved)
Hill mustard	Thistles (bull, Canada, European marsh, musk & plumeless)
Hedge-parsley (Japanese & spreading)	Wild chervil
Japanese hop	Wild parsnip
Japanese knotweed	



Dame's rocket



Burdock



Wild parsnip

If possible, invest in a good weed book or find a local weed field guide online or via your state's Department of Natural Resources. My favorite book is "Invasive Plants of the Upper Midwest," by Elizabeth Czarapata, which is available from the University of Wisconsin Press.

I also recommend a tool called a "Parsnip Predator," which you can purchase from The Prairie Enthusiasts, a local non-profit dedicated to maintaining prairies. Parsnip predators are ideal tools for severing the taproots of certain plants like wild parsnip, burdock, sweet clovers and many thistles.



Parsnip Predator

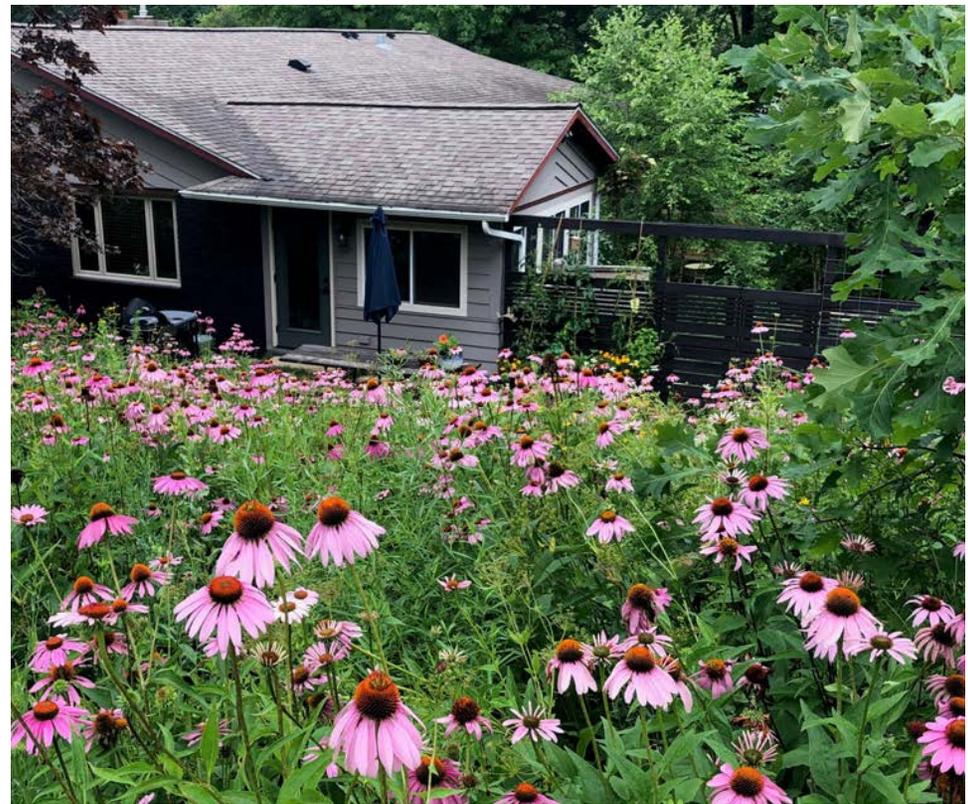


BEFORE - 2015

This image shows what my yard looked like when I bought the property in 2015. It's a typical urban landscape with non-native turf grass lawn, non-native Colorado blue spruce trees, and a hedge full of invasive shrubs. In 2016, I cut down these trees, removed the hedge, and killed the lawn. This removal phase of a restoration project is about preparing your palette by getting invasive and undesirable plants out of the way.



Stephanie Judge leads conservation real estate and land restoration projects for The Nature Conservancy across Wisconsin. She holds a professional degree in Landscape Architecture from the University of Wisconsin-Madison. As an avid gardener with a passion for healing damaged land and limiting the often-negative impacts of certain traditional planting options, Stephanie loves to integrate native and edible plants into urban spaces.



AFTER - 2020

This image shows the same view of my yard, this time with my new pocket prairie in full bloom a few years after I started my restoration. Neighbors and passersby always remark that they love this part of their walk because the site looks so interesting and different in every season, and they see so many birds, butterflies and other pollinators using the plants. I hope you love the results too, and want to make something like this happen in your yard!

The Nature Conservancy 

Protecting nature. Preserving life.

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