Creating and Maintaining a Prairie

A guide for native plantings
in your Indiana yard of any size

HAMILTON COUNTY
Soil & Water
CONSERVATION DISTRICT

Cover Photo Credit:
Myrene Brown (right), Andrew Marrs (left), Hamilton SWCD (center).

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What is a prairie?

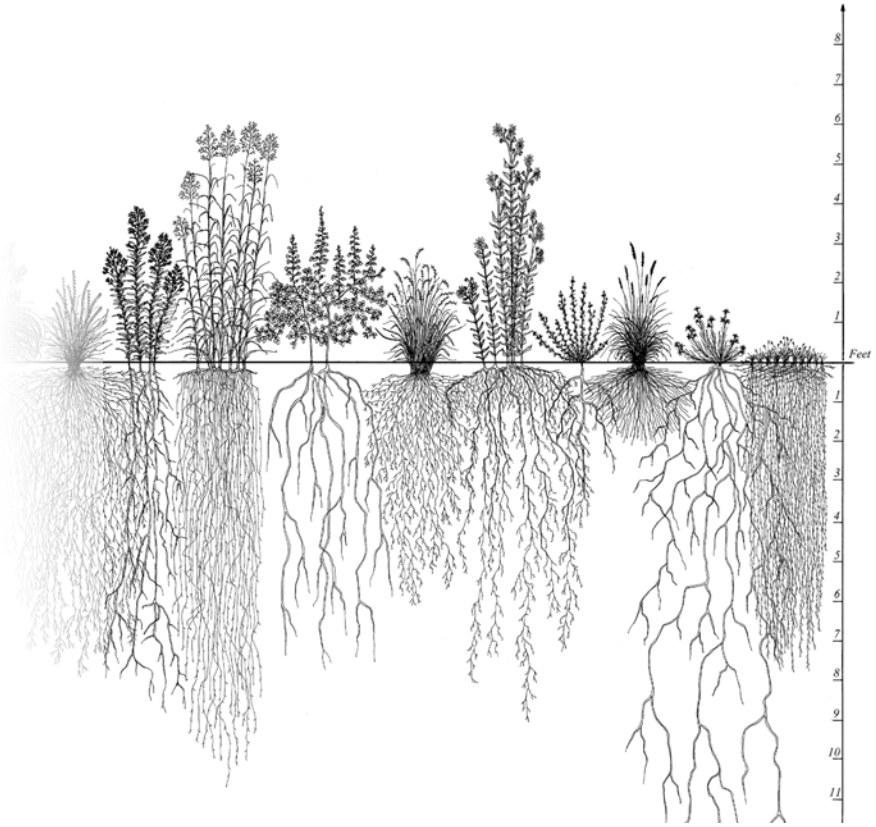
Prairies are ecosystems dominated by herbaceous plants—mostly grasses, sedges, and flowering plants called forbs. Prior to European settlement, prairies stretched across the plains and parts of the Midwest, from Texas to Canada and Colorado to western Indiana. Prairies served, and continue to serve, a vital role in providing ecosystem services like erosion control, water filtration, and pollinator and wildlife habitat across the US. As cities, industry, and the general population have grown, prairies have been converted to farmland, cities and towns, shopping malls, turfgrass lawns, and business districts taking their beauty, habitat, and contribution of ecosystem services with them.

While most of Indiana has historically been covered by forest or woodland, portions of northwestern Indiana were natural prairies. While most of central Indiana was not traditionally a prairie environment, there are many benefits to converting land to prairie for both our ecosystem and for our enjoyment.

This booklet is designed to help you plan, create, and care for a prairie ecosystem on your property.

Why create a prairie?

- Natural beauty
- Home values
- Landscape ecological function
- Habitat and biology
- Erosion control
- Water sequestration
- Biodiversity
- Climate change
- Bridging fragmentation
- Reduced maintenance
- Cost savings



Heidi Natura, Root Systems of Prairie Plants, 1995 ©
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As much as 80 percent of the water used around the home during the summer is used outside. Over half of that water is used on lawns and half of that amount is typically wasted.

Turfgrass: a little give and a lot of take!

Did you know that most turfgrasses are not even native to the United States? Our love affair with turfgrass began when European settlers brought turf with them as a status symbol. Today, turfgrasses cover 2% of land in the continental US—that's more than farmers use for corn, wheat, and fruit trees combined! The problem is that our relationship with turf is pretty one sided. Turfgrasses give us places to play sports and recreate but it requires significant amounts of water, fertilizer, time, and effort dedicated to help it survive and thrive. These requirements contribute to air and water quality issues on top of the demands for our time and dollars. Turf does all this while also lacking in habitat for animals and pollinators and doing a minimally effective job at securing against erosion. This relationship is losing some of its sparkle don't you think?

Creating
a Prairie

Where to Create a Prairie

Choosing where to locate your prairie planting, and its size, will depend on a variety of factors.

(Photo: Andrew Marrs)

LOCATION

In a residential setting, there might be a Homeowners Association (HOA) or local ordinances that regulate the maximum height of plantings, especially in front yards. Being a good neighbor and community member means considering and planning for the impacts your planting might have on adjacent properties. In some communities, a backyard or less visible area may be more suitable for a natural and diverse planting while a more landscape style native planting may be suitable for prominent areas. If you have a large property or acreage, consider areas where you would like to reduce maintenance, have accessibility for equipment for planting and maintenance, and your existing land use. To maximize the environmental benefit of your planting, consider other environmental factors that can support your planting and be part of an inclusive, diverse regional habitat. Consider ways your planting can serve as a connector, bridge, or pathway between fragmented habitat areas or to other nearby existing habitat for wildlife (ex. can your planting connect two woodland areas?).

Other Considerations

Be mindful of above and underground infrastructure. Underground pipes, drainage, gas lines, utility boxes, and sprinkler systems should all be considered. Call 811 to have any underground infrastructure marked prior to digging. Always identify any easements on your property. These areas will need to be avoided or you will need written approval or permits from the easement holder to plant in that area. Examples include HOA or municipal drainage easements, County Surveyor/ regulated drain easements, electric or gas easements, etc. Check your deed or property's land survey for more information. You can also contact the county assessor's office for information. Areas adjacent to walkways or roads where de-icing salts are used may have compromised soils and ongoing salt use can affect plantings. For safety and security reasons, consider mature height of your planting as to not block vehicle site lines or windows.

SOIL & MOISTURE CONSIDERATIONS

Soil, drainage, sunlight, weed pressure and other factors play an important role in determining a successful location for your planting. The species you choose for your planting will vary depending on the amount of sunlight your site receives (6+ hours of sun a day is necessary for most true prairie/meadow species) and drainage. Is the area typically dry or does it hold water? Are the soils nutrient dense? Alkaline? Compacted? In most situations you don't have to overthink things past sunlight and soil moisture, as most prairie species can thrive in various soil types and situations. If you have specific concerns you can get your soil tested via the SWCD to get a better understanding of its basic nutrient profile. For more information on soils considerations, visit the SWCD or NRCS websites.

SIZING

Determining a size for your prairie depends on a variety of factors. First of all, consider your property size.

For a small residential parcel, a 50-100 square foot prairie garden can reduce turf maintenance, enhance biodiversity, provide pollinator habitat, and be a beautiful addition to your landscape. It is sometimes possible to replace large portions

or even all of your turfgrass, but this must be done with thoughtful planning, care, and probably outreach and education with neighbors. Larger areas and/or acreage plantings have potential for an even larger impact on the environment and your relationship with your property. No matter the size of your property, there is an option for natives on your land.

Small native seedlings or "plugs" are an economical way to jumpstart your garden. (*Photo: Hamilton County SWCD)*

PLUGS VS. SEED

Plugs are small, first year native plants that are generally easy and economical to source, move, and plant. Quart and gallon size natives are great options, but more expensive. Using plugs or individual plants is great if you want to achieve a structured or planned look in a landscape setting—you can decide where each plant goes. Plugs also allow for instant gratification. You

don't have to wait for germination and can expect blooming much faster. Plugs can be used in larger plantings but call for a more intensive planting project—you may need to recruit volunteers or hire out pre-drilling of holes with a small auger and/or the planting of each plug. Plugs are often the best choice for areas with seasonal flowing or standing water and any erosion prone site. Plugs can be used in conjunction with an erosion control blanket to stabilize bare soil and prevent erosion until your planting is established.

Landscape planting considerations

If you are using plugs for a landscape style planting, map out your preferred planting plan ahead of time. Follow basic style guidelines like having taller plants in the back of a planting and repeating groupings of species in odd number clumps. Having a defined edge for your planting shows intention and small signs can provide educational opportunities to friends and neighbors. Don't forget mulch! For more information on creating a native area from plugs and sourcing native plants, visit our website.

For a larger area or a more diverse "meadow" look, seed is an economical choice. With the proper equipment or broadcast strategy, seeding can be an effective way to establish a diverse planting. Seeding a prairie does require patience

This Carmel home utilizes natives successfully in the otherwise tough to manage space between the sidewalk and road. (*Photo: Hamilton County SWCD)*

and reasonable expectations of germination, no matter the size of the planting. Many native species require cold or wet stratification before they will germinate. This means that the seed needs exposure to a cold and/or wet environment for a period of time before they can break their dormancy and begin to grow. This means that many species may need to overwinter in the ground before they will germinate, so it is important to manage your expectations about how quickly your prairie will begin to establish. Seed can also be used effectively in erosion prone sites but considerations must be taken to prevent erosion. Use erosion control fabric and/or a cover crop (more on cover crops on page 20). Of course, plantings established by seed and plugs have different management strategies so review and consider those differences (outlined on page 31) as well.

Large planting considerations

For a larger planting you'll need to consider your access to planting and maintenance equipment. While it is possible to hand seed an acre project, you'll likely need larger equipment like a native seed no-till drill to seed multiple acres effectively (see page 24). Larger plantings do have the advantage of lowering overall per acre costs for installation and maintenance. Additionally, conversion of larger areas of turf or management intensive land uses to prairie can result in significant savings of time and money on property management long-term.

In the end, the size of your planting comes down to your budget and the size of planting you are able to prep, plant, and effectively maintain.

Don't bite off more than you can chew

For residential or acreage plantings, it is important to remember that the biggest factor in your prairie's long-term success is management. Therefore, it is critical that you don't create a prairie that you cannot physically or financially maintain appropriately. While it can be exciting to start off with a large project, management can become overwhelming. Remember that you can always expand your planting over time! If your budget allows, consider hiring a qualified restoration contractor for ongoing maintenance at least through the establishment period.

WATER EDGE PLANTINGS

Prairie style plantings are advantageous along ponds and water bodies for many reasons. Ponds surrounded by turfgrass often exhibit erosion and even sloughing of the pond bank where whole sections of turf simply slide off into the water. This exposure of soil impacts water quality as the soil particles get washed into the water in a vicious cycle. Turfgrass is largely ineffective at securing the pond edge for two reasons. First, detention pond banks are typically comprised of poor quality, nutrient depleted, rocky soil—turfgrass simply can't establish well in these areas. Secondly, turfgrass roots only extend a couple inches into the ground. Therefore, they cannot effectively hold on to the soil at the water's edge and secure it against erosion.

Native plantings do not have to diminish use or enjoyment of the pond. In fact, they can do quite the opposite. (*Photo: Hamilton County SWCD)*

Prairie plantings are a great solution because of their dense, fibrous root systems. Native plant roots extend deep into the ground, effectively locking the soil in place and preventing erosion that is difficult and expensive to remediate. Pond edge plantings are great for water quality as well. They are so good that we often call these plantings "filter strips". A native or prairie planting around the edge of a pond serves as a filter for any surface water that is draining down the bank into the pond. The water runs into this dense strip of native plants and slows down, preventing more erosion, and then slowly infiltrates into the soil. The plantings also absorb excess nutrients that are carried in the water from lawn fertilizers and pollutants like *E. coli* from dog or goose waste. The filter strip cleans the water before it ever hits the pond, resulting in better overall water quality. Filter strip or pond edge prairie plantings also provide beauty and pollinator habitats and a more relaxed, soft aesthetic like a natural pond for your community. On top of the ecological and aesthetic benefits, when these plantings replace large portions of turf, which is expensive to maintain, and prevent erosion issues, your community can see direct reductions in mowing and pond management costs as well as erosion control costs.

How to Create a Prairie

Once you have determined the location and completed planning for your planting, it's time to prepare your planting area. While this isn't the most exciting step in seeing your project become a reality, it is the most important. Proper site preparation is key to the long-term success of your planting. Skipping ahead will cost you time, money, and frustration. There are many ways to prepare your area, but no matter the size of your planting, you are looking to create a smooth, clean planting surface where your seed can make solid contact with bare soil.

ELIMINATING EXISTING VEGETATION

This can be achieved through chemical (herbicides) or manual means depending on your site, preferences, existing vegetation, and timeline.

METHODS

CHEMICAL: Apply a broad-spectrum herbicide (ex. active ingredient glyphosate) to the area. You may need another application as new vegetation sprouts. Wait 10 days after your final application prior to seeding. Areas being converted from pasture may need multiple applications over 1-2 growing seasons. Follow all label guidelines for your herbicide including requirements for temperature, precipitation, and wind during application and afterward.

Herbicide applied according to the label can be an effective way to prepare sites for a high quality, native garden. (*Photo: Hamilton County SWCD)*

Many people may be hesitant to use a herbicide. Lowering synthetic inputs and protecting pollinators are often drivers for creating these habitats. However, we believe that sometimes a judiciously and safely applied herbicide used to facilitate the transition from one type of vegetation to another, more beneficial, long term habitat can be worthwhile. For a large planting in particular, other mechanical means of site preparation are just not practical or effective.

SMOTHERING AND SOLARIZATION: These methods include covering turfgrass with wet newspaper, cardboard, or thick black plastic. The goal is to restrict light and suffocate or bake out the existing vegetation. These methods can take longer as the cover usually needs to be in place at least one full growing season.

SOD REMOVAL: Use a manual or gas powered (available at rental shops) sod cutter to remove turf from the surface.

REPEATED TILLAGE: Tilling is not ideal as it exposes weed seeds and encourages their germination. You would need to repeatedly till your planting area for at least one growing season to effectively exhaust the weed seeds and even then, you may have more weeds for the first few years.

Adding compost or fertilizer is not necessary prior to planting native species. If you feel the area is depleted of nutrients, we recommend a soil test so that the proper amounts of the needed fertilizers are applied.

Your site prep and seeding method will be influenced by the existing vegetation. If you aren't sure about the best method for your property, consult with your local conservationist.

SEED SELECTION

CHOOSING SPECIES

Many suppliers offer a variety of seed mixes for various soil types, moisture and sun considerations, height and color specifications, wildlife priorities, and more. Conservationists at your SWCD, Natural Resource Conservation Service (NRCS), and Pheasants Forever can help you determine an appropriate mix or help you create a custom mix. If you are participating in a local or federal cost share program to implement your planting, your seed mix may have specifications that must be met. Regardless, choosing a supplier for quality seed or plants is critical.

SOURCING SEED

BUY LOCAL: Try to find a supplier who sources their seed or plants from as close to your location as possible. Locally sourced seed and plants are best adapted to our local conditions and able to provide for local wildlife and pollinators.

DO YOUR HOMEWORK: Many suppliers offer "native" seed mixes, but you can't necessarily take their word for it. Often these species are local to the USA more broadly or not actually native at all. Ask your conservation partners to review the species list for you or spend some time researching the species on www.wildflower.org.

PURE LIVE SEED: Seeding recommendations are often given in pure live seed (PLS) rates. Pure live seed is the living seed of the intended crop that will germinate from a seed bag. This figure

accounts for the other material (impurities, weed seed, etc.) also found in all seed mixes.

SEEDING METHOD: Your seeding method will influence how you order your seed. If you are broadcasting your seed over a prepped planting area, a mix where all the seed is in one bag might be most appropriate (though you will likely still need a carrier or filler mixed in to help you achieve even distribution in planting). If you are using a no-till drill (see page 24), you will likely need your carrier/filler, native grass seed, and smaller/forb seed in separate bags for distribution into the seed drill.

KEEP THE TAGS: All seed sold in Indiana is required to come with a tag that outlines the species, PLS percentages, and other info. It can be helpful to keep these tags with your records after planting. If you are participating in certain cost share or financial assistance programs, you may be required to submit your seed tags.

COVER CROPS & EROSION CONTROL

Plantings that are on a slope or otherwise erosion prone or near moving water (water's edge, floodplain area, drainage swale) may need extra erosion control measures to prevent soil loss and seed being washed away prior to establishment. In some areas this may be an erosion control fabric that is secured over the planting area. The fabric degrades over time leaving just the established planting. Another option is cover crops. These quick germinating species are added to your seed mix or planted ahead of natives. These species provide temporary cover that can help secure against erosion and shade out

weeds. Common cover crops include oats, Virginia wildrye, and Canada wildrye. Your seed supplier or conservation technician can help you determine the appropriate cover crop.

SEEDING RATES

Your seed supplier or conservation technician can help you determine appropriate seeding rates for your project.

SEEDING METHODS

Your site is prepped, your seed is selected and purchased, now things are getting exciting! How do we get the seed in the ground? The two primary seeding methods are broadcast seeding or using a specialized planter called a native seed no-till drill. Of course, there are considerations, benefits, and negatives for both options.

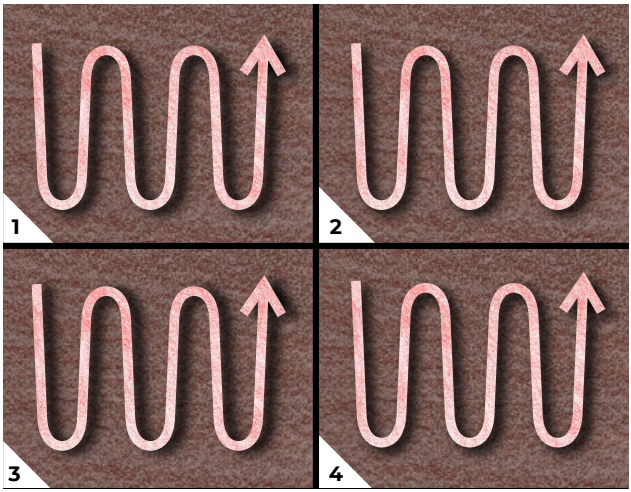
Your goal for seed distribution is for your seed to get solid contact with the soil. Native seed does not need to be planted very deep in soil. In fact, if it is more than one quarter inch deep, it may not germinate, so seed distribution and depth is critical for planting success.

The primary driver for your seeding method is again going to be planting size. If your planting is one acre or less, it is feasible to hand broadcast your seed. Over one acre, you'll want to purchase, borrow, or rent equipment for seeding. You may also consider outsourcing to a qualified contractor.

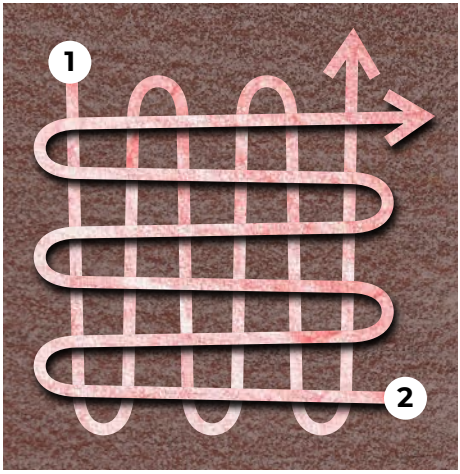
HAND OR BROADCAST SEEDING

Even distribution is the primary goal with seeding by hand. A general goal will be 25-50 seeds per square foot. Tools used to broadcast lawn seed (hand crank or push seeders) are typically not effective for even distribution of native seed mixes. The variety in seed size and shape means large seeds can plug up the seeder and smaller seeds won't be distributed evenly. The variation in size of the seed and relatively low volume of seed required can make it difficult to distribute evenly. To improve distribution, add in a carrier/filler to increase volume. Sawdust, compost, peat moss, and coarse vermiculite are common choices. See the Purdue Extension publication on Seed Fillers and Carriers for Planting Native Warm-Season Grasses and Forbs for more info.

Depending on the size of your area, divide your seed and planting area into 2-4 equal parts. Hand broadcast each section's seed while walking in even rows in that section. Scatter the seed slowly and evenly, being careful to not run out before completing the section. Another option is to divide the seed into two buckets. Walk north/south rows starting in one corner of the planting area distributing the first bucket of seed. For the second bucket of seed, start in an alternate corner and walk east/west rows. A light raking after distributing seed will help ensure ground contact. For larger areas, you can fashion a drag from a piece of old chain link fence or other material you have on hand and drag it by hand or tractor across the area. Avoid using heavy rollers or anything that will push the seed in too deep.



Hand / Broadcast Seeding - Pattern 1



Hand / Broadcast Seeding - Pattern 2

MECHANICAL SEEDING

Larger plantings can be efficiently planted using specialized equipment. A no-till or grass drill seeder (ex. Truax) is a great choice to seed native plants. These drills have three seed boxes for different size seed. The drill must be calibrated based on the seed type, desired depth, and planting rate. This type of planter opens up a slit in the soil and 'drills' the seed into that opening. This method is a great way to plant into dead vegetation or a cover crop. Effective calibration of the drill seeder and/or a qualified operator is necessary for success (see Purdue Education Store guide FNR-556-VW or the associated video on YouTube). Some Soil and Water Conservation Districts or Pheasants Forever chapters have no-till drills that can be rented for planting projects. Grain or wheat drills are not effective for native seed plantings.

A native seed drill has seed boxes that accommodate the various sizes and diversity of native plant seed. These planters drop seeds into slits opened in the ground. (*Photo: Hamilton County SWCD)*

A drop seed (eg. Brillion) with an agitator and picker wheel can be used if your planting bed is smooth. Broadcast seeders are often accessible but not ideal. Seed can build up in the seed bin or not be distributed evenly. This method also results in less favorable seed to soil contact and requires that area to be drug after to achieve good soil contact. It is often recommended to double seeding rates with this method. Hydroseeding is not an effective way to establish a native prairie but hydromulch as a cover over drilled or broadcast seed is acceptable.

A broadcast planter equipped for native seed planting can also be effective in a clear, well prepared bed. *(Photo courtesy: Wildflower Farm)*

SEED TIMING & STRATIFICATION

When your seed goes in the ground will depend on your prep timeline, erosion potential of your site, and your overall goals. In general terms, planting in the fall will favor forbs and spring plantings will favor native grasses. This is largely due to the fact that many native forb species required cold moist stratification of their seed. This means that the seed must be subjected to 30-90 days of cold temperatures and moisture to break their dormancy and germinate in the spring. Late fall or winter seeding allows your seed to stratify naturally over the winter. For small amounts of seed, you can fake this process by placing the seeds on a moist paper towel inside a sealed plastic bag in the refrigerator for the required period of time. For a spring seeding, the species that require this stratification will likely not germinate until the next spring (they stratify during the next winter).

See additional resources online at www.hamiltonswcd.org/prairie for example preparation and planting timelines.

PLANTING WINDOW CONSIDERATIONS

SPRING

MARCH – MID-JUNE

- Favors warm season grasses
- Cool season weeds can be eliminated before planting
- A cover crop can be mixed in and planted at the same time on erosion prone sites
- More time for spring weed control
- Clay soil can be more difficult to work with
- Delayed germination for forbs/sedges that need over wintering/ cold moist stratification

WINTER

THROUGHOUT WINTER

(just before snow events is ideal through late February)

- Natural cold moist stratification
- Erosion prone sites would need cover crop seeding in the late summer/fall (prior to August 15th) to stabilize soil over the winter
- Time to prep site throughout the growing season
- Clay soil can be easier to work with

Caring
for a Prairie

Management

Effective maintenance of your project will be an ongoing task. As time goes on and your planting matures, maintenance will likely decrease, but never stop. You may find that learning how to adaptively manage your planting will, over time, become a fun, yet occasionally frustrating, endeavor. Species will come and go, weeds and woody vegetation will need to be managed, new species can be added.

Invasive species are non-native and cause harm to the environment, human health, and the economy. The proliferation of invasive species in an ecosystem disrupts the complex and critical relationships that our native species have with their environment. Shockingly, 83% of invasive plants that are harming Indiana's greenspaces come from the landscape trade and home gardens. Invasive plants readily invade disturbed environments and are a threat to all native and prairie plantings. Common invasive species you will need to manage include callery pear species, white mulberry, Canada thistle, autumn olive, and Asian bush honeysuckle.

Additionally, resources to help you identify and manage invasive species are available via the Hamilton County Invasives Partnership (HIP). HIP is a collaborative group of local landowners and managers, municipalities, and conservation groups working to manage invasive species in Hamilton County. Learn more at www.hcinvasives.org.

LANDSCAPE PLANTING MAINTENANCE

Landscape or formal native plantings should be weeded throughout the growing season. Avoid letting weeds go to seed, especially noxious weeds like Canada thistle. If you have weeds about to set seed that you can't get to due to time constraints, cut and bag the seed heads. If you have trouble distinguishing emerging natives from emerging weeds, resources such as the NRCS Seedling ID Guide are available on our website. Mulch annually or until the planting fills in depending on your preferences. Some native species (ex. purple coneflower, black-eyed susan) can be deadheaded (remove faded blooms) to limit self-seeding or encourage another round of blooms. Some leggy plants (ex. asters and goldenrod) can be kept compact and discouraged from flopping over by cutting them back by one half in mid-May. If you choose to thin your planting, you can divide most natives and use separated plants elsewhere to start another garden or share with friends and neighbors.

This Noblesville native planting provides visual interest and wildlife cover and food throughout winter. (*Photo: Hamilton County SWCD)*

It is great to leave spent stems standing through the winter to provide seed for birds and nesting habitat for bees and other

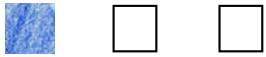
wildlife. Providing this habitat and food source overwinter is a fantastic contribution to our ecosystem. In early spring, cut back the previous year's foliage. If you can, wait until daytime temperatures consistently reach the 50s to protect the beneficial insects that have overwintered in the leaf litter.

Refer to the maintenance suggestions for larger plantings below for additional info. The scale and tools used may vary for a smaller planting, but the general maintenance concerns and ideas are the same.

LARGER PRAIRIE MAINTENANCE

Larger plantings from seed often require a combination of chemical and mechanical maintenance. Developing a management plan and monitoring schedule will help you stay on top of maintenance and avoid getting behind and overwhelmed. Setting reminders on your smartphone or calendar each year can be great triggers if you aren't regularly interacting with your planting.

YEAR 1



- In the first growing season, your site might be a bit underwhelming (honestly, it may look downright bad.) Remember, the natives are growing down first, establishing their root systems. Stay positive and patient.
- Most of your weed pressure in year one comes from annual weeds. Mow to keep annual weeds (foxtail, common ragweed, marestail) from re-seeding. When vegetation reaches a height of 12 inches (or before it sets seed) mow the site down to 6-8 inches. At this stage, any natives that have germinated will be less than 8 inches tall and below the mow level. Note that you will need a mower with an adjustable height deck. Mowing with a standard mower below six inches will damage your natives. A flail type mower is ideal as it shreds the vegetation and prevents clumping which can smother your native seedlings.
- Perennial weeds and grasses can be cut with a string trimmer (or mowed) during bloom but before setting seed. Hand pulling is likely to result in disturbance of native seedlings.
- Species to look out for: Canada thistle, fescue, crabgrass, nutsedge, reed canary grass.

Keeping a Prairie a Prairie

Most of Indiana has historically been forests. Left to its own devices, it would revert back to woody vegetation. However, we now have many noxious weeds and invasive species that are able to establish quickly and create a monoculture of non-native plants that are detrimental to our ecosystem. To keep a prairie a prairie, we will need to routinely remove noxious weeds and woody vegetation. It's worth the effort to remove woody species when they are small instead of waiting until they have a few years of growth and are hard to manage.

Prescribed fire is used as a management tool at the Strawtown Koteewi prairie in Hamilton County. (*Photo: Hamilton County Parks and Recreation)*

In natural prairies and before development, wildfire was an effective prairie management tool. Fire removed dead vegetative litter, restored nutrients to the soil, reduced woody vegetation, and encouraged new growth. Prescribed fire or controlled burns are still

an incredibly effective means of prairie management. Controlled burns are used right here in Central Indiana for prairie management, but they do require extensive planning, permits, tools, and trained teams. If you are interested in seeing if a controlled burn is possible on your property, contact your conservationist for assistance.

Adaptive management options

Other natural resource professionals discourage mowing the first year or two unless it has been identified as necessary. This adaptive management approach encourages you to react to what you are seeing in your planting versus following a scheduled maintenance plan. Native annuals like marestail and common ragweed are great at holding soil and providing food and cover for wildlife. These plants are often gone after the first growing season with no landowner intervention. Grasses such as orchardgrass, timothy, smooth brome, Kentucky bluegrass, tall fescue, and reed canary grass thrive following mowing. Mowing gives these grasses a competitive advantage over native graminoids and wildflowers. Focusing on effective site prep and planting into a vegetation-free area is critical to limit the weed pressure on your planting.

YEAR 2

- You should see more natives germinate this season after cold-wet stratifying over the winter.
- Weeds will continue to be an issue in the second season, particularly biennial (two-year growth cycle) weeds like Queen Anne's lace, sweet clover, teasel, burdock, and wild parsnip. In year 2, biennials can be mowed to 12 inches when in full bloom but before setting seed (mid to late June). Preventing biennials from seeding helps prevent re-infestation of the area.
- Rhizomatous weeds such as Canada thistle and Canada goldenrod can be hand-treated with herbicide using a cotton glove placed on the outside of a protective rubber glove. Soak the cotton glove in herbicide (such as "Roundup") and apply to the leaves and stems of the weed without touching adjacent desirable plants. This is best done on a calm, cool day, so that the herbicide does not volatilize and drift onto nearby flowers.
- Some species to look out for: turfgrasses, callery pear species, Canada thistle, teasel, reed canary grass.

YEAR 3+

This native planting in a Westfield HOA is well established in its third year. Turfgrass strips between the prairie and walkway allow community members to confidently enjoy the area. (*Photo: Hamilton County SWCD)*

- By year three, you should be able to find most of the species you seeded. If initial weed pressure has been effectively managed, you should be able to shift to rotational disturbance as a management tool each year.
- Use mowing as a weed control measure and establishment tool as needed. As mentioned in the "Keeping a Prairie a Prairie" box, controlled fire is a great management tool, but rotational mowing is a fine substitute. The best time to mow is late winter/early spring just as plants are breaking from dormancy. Purdue University recommends mowing when the buds of the sugar maple (*Acer saccharum*) tree are breaking open in the spring. At this stage, you can mow as close to the ground as possible (a flail type mower is still ideal). Do not mow when soils are moist to prevent damage to the prairie and compaction.

- If possible, divide your prairie into three management sections and mow or burn one-third each year. This leaves two-thirds of your planting standing as a respite for wildlife.
- Over time, even with perfect maintenance, you may find that a general loss of diversity in species or that forbs are outcompeted in your prairie by native grasses. This is normal and expected and not necessarily a problem. If you want to maintain a high level of diversity in your prairie planting, there are management strategies that can help (consult your conservationist). However, it is also possible to interseed new species. Interseeding involves adding new seed without killing existing vegetation. Interseeding is often most successful when dominant warm season grasses like big bluestem, Indiangrass, and switchgrass are suppressed. Interseeding into stands of short native bunch grasses (side-oats gramma, little bluestem) is often successful. The Xerces Society offers a great guide to interseeding (Interseeding Wildflowers to Diversity Grasslands for Pollinators) that is available as a free download online (see additional resources on page 49).

Outsourcing maintenance

If you have the budget, outsourcing prairie maintenance to a qualified restoration contractor is a great option. These professionals know exactly what they are looking for and are able to adaptively manage your planting. It is important to contract with a contractor knowledgeable about native plants and their maintenance. Your conservationist should be able to help you identify some contractor options.

Common Issues & Mistakes

PLANTING TOO DEEP

When planted too deep (>1/4 inch), many native seeds will not germinate. No matter how you distribute your seed, it is critical to not plant too deep.

EXPECTATIONS AND/OR TIMELINE EXPECTATIONS ARE OFF

Native plantings take time to germinate and develop. They spend the first 1-2 growing seasons "growing down", developing that dense root system. The old saying "sleep, creep, leap" applies here! If you, or your neighbors, have unrealistic expectations for your planting, it will be easy to get frustrated or disappointed thinking your planting has failed when really it is just progressing on mother nature's timeline. While some plantings thrive early, it can take three or more growing seasons for hearty, dense plantings to mature. Adaptively manage your planting and be patient.

Managing expectations is especially important for projects on public or homeowner's association properties, churches, and schools. Communicate timeline and expectations as well as the many ecological and financial benefits of the planting.

This planting site at Grace Church in Noblesville was prepped and planted in **Spring 2016**. (*Photos: Hamilton County SWCD)*

End of the first growing season **(October 2016)**. Signage was used to educate the community and temporary fencing was used to protect the young plantings from geese during the first season.

Growth begins early in season 2 **(May 2017)**.

Diversity and color abound in the fourth growing season **(July 2019)**.

POOR QUALITY SEED

Cheap seed mixes can have lots of inert fillers, poor germination rates, and, at worst, contain noxious weed seed. Be sure to source your seed from a quality vendor and based on Pure Live Seed rates. If your vendor can't answer your questions or doesn't seem to be truly knowledgeable about natives, look elsewhere or ask your conservation professional for advice.

WEED REGULATIONS & HOA REGULATIONS

In residential areas, many communities and homeowner's associations (HOA) have strict tall grass ordinances or landscaping requirements. In the planning stages of your project, look into any regulations that may pertain to your

Fencing and signage are a great way to show intention and care for your planting in highly visible areas. (*Photo: Hamilton County SWCD)*

planting. You may need to get permission or select a new location, size, or scope of your project to fit into local guidelines. If your community has strict rules that outlaw native plantings, don't give up hope. There are many resources that can help you educate friends and neighbors and encourage your city or HOA to change their policies.

MISSED OPPORTUNITIES TO EDUCATE FRIENDS AND NEIGHBORS

ELEMENTS OF CARE AND CERTIFICATIONS

Native plantings are becoming more accepted in our planned environment as the benefits and beauty become more well known. This can be especially important in the early development stages when your planting may not look good yet.

Taking steps to show intention with your planting can help those who are unfamiliar with native plantings see their value and beauty. If your planting is in a prominent area, show that your planting has purpose in your landscape. Elements of care like bird houses, benches, edging and signage show that the area is planned and cared for. Mowed edges, particularly near walkways, show intention and management and provide clear paths for movement and lines of site. Signage can help educate passersby on the purpose and benefits of the planting and prevent against unwanted mowing or spraying.

Several organizations offer certifications or signage that you can use. Some organizations to look at would be your SWCD,

the Indiana Native Plant Society's Grow Native program, the Indiana/National Wildlife Federation, Xerces Society, and other local initiatives. For high visibility plantings in particular, remember that your project could be the example that inspires others to create their own planting or the example that discourages someone from using natives. Maintain your planting with care.

EASEMENTS AND UTILITY CONFLICTS

For both residential or rural projects, it is critical to identify any easements or above/below ground utilities that might conflict with your project. Always call 811 to have utilities marked early in the planning stages for your project. Contact your local county surveyor or recorder's office to identify any easements on your property related to stormwater, legal drains, pipelines, and other utilities. An easement isn't necessarily a hard stop for your project. In many cases, a native planting is a great fit for easement areas as long as woody vegetation is kept in check. Contact the easement holder to talk through your ideas and see what might be possible. Remember that planting in an easement without permission may lead to your planting (time, money, and plants) being removed with no compensation.

INEFFECTIVE SITE PREP

Benjamin Franklin said an ounce of prevention is worth a pound of cure, and while he probably didn't have native prairies in mind, it still holds true. Site preparation shortcuts lead to bigger headaches in the long run.

INEFFECTIVE OR DELAYED MAINTENANCE

Native plantings can be lower maintenance than other growing options once established but they are absolutely NOT "no maintenance"—especially during early establishment. If you seed or plant your garden and walk away, your planting is destined to fail. Annual and noxious weeds, woody vegetation, and erosion are real threats to your project. If you are concerned about maintenance (time, money, knowledge), don't be afraid to start small and expand your planting over time. If your budget allows, consider outsourcing maintenance to a qualified restoration company or landscaper.

Turf or clover walkways are a great way to add recreational value to a prairie planting. *(Photo: Hamilton County SWCD)*

Conclusion

In the end, your planting is a living ecosystem existing in a changing world. Your prairie will have seasons of beauty, color, and diversity and seasons of weeds and challenges. You will have seasons where management is short, easy and even fun, and seasons of confusion, low time and funds, and frustration. Give yourself and your prairie grace. As with any type of gardening, prairie establishment and care takes trial, error, and perseverance. Ultimately, your prairie can be a mechanism for your family or community to bring a little beauty, habitat, ecological resilience, and peace back to our busy and complex world. As your planting grows, so will you. Stay curious and bring some prairie to your corner of the world.

"And by experiencing prairie—over the four seasons, and at various times of day, in all weathers—you develop a heightened sense of awe and wonder that will spill over into every other area of your life."

—Cindy Crosby, *The Tallgrass Prairie: An Introduction*

Additional Resources

A variety of additional resources related to topics covered in this resource, as well as a free digital download of this booklet, are available on the Hamilton County Soil and Water Conservation District website at www.hamiltonswcd.org/prairie.

Onsite technical assistance, information on contractors and suppliers, and information regarding conservation cost share and financial assistance is available from local resources including your county soil and water conservation district and the Natural Resource Conservation Service (NRCS) as well as local Pheasants Forever Chapters, land trusts, and private contractors.

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